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May 8, 2002

## DBS Signals

### Undergoing a Renaissance of Growth

At a present count of approximately 18 million subscribers, the direct broadcast satellite (DBS) industry, led by DIRECTV and EchoStar, appears to be shifting into a higher gear in its long fought battle with the cable industry. Despite the nearly ubiquitous availability of digital cable and cable modems, the DBS industry is sustaining strong subscriber gains while continuing to derive the majority of its growth from cable in the large urban/suburban markets.

- In our view, this continued trend has been driven by a dramatic transformation of the DBS product offering vis-à-vis cable over the last two years in three respects: local channel availability, multi-room equipment cost reduction and a more favorable monthly price-value comparison.
- In addition to appealing more broadly to the mass market in urban/suburban parts of the country, DBS has capitalized on the early adopter demand for two potentially explosive new product categories—HDTV and PVRs—leveraging its typical lead-to-market advantage over cable through national reach and retail distribution advantages.

These factors, combined with a transformation over the last two years of its sales and distribution models, have resulted in an improving quality profile of subscriber growth and dramatic reversal of the industry's key operating metrics—ARPU, SAC and churn—from a deteriorating trend one year ago to a rapidly improving one currently.

The aforementioned improvements underlie an explosion in profitability that the industry is undergoing, evidenced both by the breakout in EBITDA, spurred by significant operating leverage, and an imminent pending turn toward substantial free cash flow and earnings generation, given the inherent fixed capital cost leverage of the business.

The prospects for consolidation under the proposed merger of EchoStar and Hughes Electronics/DIRECTV would substantially leverage the aforementioned subscriber growth dynamics, by extending local channel availability from 60% of the U.S., currently, to the entire country, and profitability characteristics by reducing churn and SAC.

Overall, these trends highlight the sector's extremely attractive valuation and investment outlook. Specifically, EchoStar and Hughes/DIRECTV are selling at 10–11 times 2003 EBITDA, while EchoStar is also trading at a traditional P/E multiple of 25 times next year's forecasts, versus five-year compound annual growth prospects of 20%–30% beyond 2002. As a result, we reiterate our ratings of Strong Buy on EchoStar (DISH) and Buy on Hughes Electronics (GMH).

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## Contents

<b>Viewpoint .....</b>	<b>3</b>
DBS Undergoes a Renaissance of Growth... ..	3
More Deeply Penetrating the Mass Market in Urban/Suburban Areas.....	3
While HDTV and PVR New Product Cycles Tap High-End Market. ....	5
While Broadband Remains a Disadvantage, DBS Is Making Strides.....	8
Highlighting the Industry's Improving Sub Growth Quality Are Improvements in All Key Operating Metrics... ..	9
Which Underlie an Explosion in Profitability That the Industry Is Undergoing.....	10
...And Which Consolidation Stands to Significantly Leverage. ....	11
Valuations Appear Extremely Attractive.....	12
And Investment Outlook Improving.....	13
<b>I. Customer Growth .....</b>	<b>23</b>
Local Channels .....	23
Multi-Room Equipment Cost Reductions .....	28
Monthly Pricing .....	29
Other Competitive Advantages .....	31
Long-Term Subscriber Projections .....	32
<b>II. Convergence .....</b>	<b>35</b>
HDTV .....	35
Personal Video Recorders (PVR) .....	37
Interactive TV .....	40
Broadband .....	42
<b>III. Cash Flow Profitability .....</b>	<b>45</b>
<b>IV. Consolidation .....</b>	<b>47</b>
EchoStar Communications—1Q02 Review .....	50
Hughes Electronics—1Q02 Review .....	65

## Table of Exhibits

Figure 1: Comparison of DBS Penetration in Rural and Metropolitan Areas .	15
Figure 2: DBS Industry Subscriber Model.....	16
Figure 3: DBS vs. Digital Cable Offering Comparisons .....	17
Figure 4: DBS Versus Cable Subscriber Projections .....	18
Figure 5: Improving DBS Operating Metrics.....	19
Figure 6: DBS Industry Operating Model .....	20
Figure 7: DBS Industry Valuation Comparison.....	21
Figure 8: DBS Sector Stock Performance vs. Cable .....	22
Figure 9: DIRECTV / EchoStar Channel Duplication.....	24
Figure 10: Top 50 Markets Competitive Analysis.....	25
Figure 11: Top 51-100 Markets Competitive Analysis.....	26
Figure 12: U.S. Multichannel Television Subscribers.....	34
Figure 13: EchoStar—Quarterly DBS Metrics .....	51
Figure 14: EchoStar—Projected Subscriber Model .....	58
Figure 15: EchoStar—Projected Operating Model .....	59
Figure 16: EchoStar—Projected Income Statement.....	60
Figure 17: EchoStar—Projected Sources and Uses Statement.....	61
Figure 18: EchoStar—Projected Balance Sheet.....	62
Figure 19: EchoStar—Discounted Cash Flow Valuation.....	63
Figure 20: EchoStar—Valuation Multiple Analysis .....	64
Figure 21: DIRECTV—Quarterly DBS Metrics .....	66
Figure 22: DIRECTV—Projected DBS Subscriber Model.....	74
Figure 23: DIRECTV—Projected Operating Model.....	75
Figure 24: DIRECTV— Discounted Cash Flow Valuation.....	76
Figure 25: DIRECTV Latin America—Projected Operating Model.....	77
Figure 26: DIRECTV Latin America—Discounted Cash Flow Valuation .....	78
Figure 27: Hughes Network Systems—Projected Operating Model .....	79
Figure 28: Hughes Network Systems—Sum-of-the-Parts Valuation .....	80
Figure 29: PanAmSat — Income Statement .....	81
Figure 30: PanAmSat—Sources and Uses Statement .....	82
Figure 31: PanAmSat—Balance Sheet.....	83
Figure 32: PanAmSat—Discounted Cash Flow Valuation .....	84
Figure 33: Hughes Electronics—Projected Consolidated Operating Model....	85
Figure 34: Hughes Electronics—Projected Income Statement .....	86
Figure 35: Hughes Electronics—Projected Sources / Uses Statement .....	87
Figure 36: Hughes Electronics—Sum-of-the-Parts Valuation .....	88
Figure 37: Hughes Electronics—Valuation Multiple Analysis .....	89



## Viewpoint

### DBS Undergoes a Renaissance of Growth...

At a present count of approximately 18 million subscribers, the direct broadcast satellite (DBS) industry, led by DIRECTV and EchoStar, appears to be shifting into a higher gear in its long fought battle with the cable industry. Our expectations a year ago (see our May 16, 2001 DBS Industry Report) anticipated a slowing in DBS subscriber growth coupled with an underlying shift in the composition of growth to the rural parts of the country as a result of cable's widespread deployments of digital cable and cable modem service in the urban/suburban areas. In dramatic contrast, the DBS industry is actually sustaining strong subscriber gains while continuing to derive the majority of its growth from the large urban/suburban markets. These factors, combined with a transformation over the last two years of its sales and distribution models, has resulted in a dramatic reversal of the industry's key operating metrics—ARPU, SAC and churn—from a deteriorating trend one year ago to a rapidly improving one currently. The confluence of these aforementioned trends has paved the way for an explosion in all underlying profitability metrics—EBITDA, EPS and free cash flow—which highlight the sector's extremely attractive valuation and investment outlook.

### More Deeply Penetrating the Mass Market in Urban/Suburban Areas...

Since the DBS industry's introduction of local channels beginning in early 2000 into the top 36-41 markets of the country, which represent approximately 60% of U.S. homes, the majority of DBS growth has been derived from these markets. This includes approximately 70% of DIRECTV's subscriber additions coming from 41 of the top DMA markets where it offers local and an estimated 60% of EchoStar's growth derived from 36 of the top markets where it makes local available. While the dramatic uprising of cable over the last two years—resulting in 15 million digital cable subscribers with availability to 80% of the U.S. and 7 million cable modem subscribers with availability to 70% of the country at the end of 2001—was expected to significantly narrow DBS's window of opportunity in urban/suburban markets, the level of DBS growth in these markets has not abated (as gross additions in the top 40-45 markets has generally grown faster than overall growth). Further, DBS churn in the urban/suburban markets (where local is available) is reportedly lower than in rural areas, suggesting an even higher percentage of net additions are being derived from these areas, as outlined in Figure 1. **As a result, we expect DBS industry net additions of 2.6 million in 2002, down only modestly from last year's 2.9 million net additions, to finish this year with nearly 20 million industry subscribers, as displayed in Figure 2.**

In our view, this continued trend has been driven by a dramatic transformation of the DBS product offering vis-à-vis cable over the last two years in essentially three respects:

- 1) **Local Availability**—As mentioned above, local channels became available over satellite for the first time in early 2000, following

passage of the Satellite Home Viewer Improvement Act in 1999, which provided the industry with a compulsory license to offer local signals, and industry consolidation in 1999 in the form of EchoStar's acquisition of ASkyB and DIRECTV's acquisition of PrimeStar, which essentially doubled the capacity of both satellite providers to roughly 500 channels. This eliminated the need for consumers in the top 36-41 markets to either keep the basic broadcast tier of cable or obtain an over-the-air antenna in order to receive local signals with DBS service, thereby unleashing significant pent-up demand for DBS service in the urban/suburban markets that continues today.

- 2) **Multi-Room Equipment Cost Reduction**—DBS equipment costs at retail were slashed several years ago and promoted with aggressive free equipment and installation offers. However, consumers were hit with a "sticker-shock" effect upon finding that the cost of second set receivers to wire additional TV's, along with installation costs for more than one set, resulted in over \$500 in upfront costs for the average household with 2-3 television sets. However, over the last year, DIRECTV and EchoStar have substantially reduced the cost for new customers to wire multiple TV's within a home, as DIRECTV now offers two boxes with installation for \$0-\$49 and EchoStar has successfully introduced an equipment rental for up to four boxes on one dish along with a discounted two box purchase offer similar to DIRECTV's (both DIRECTV and EchoStar require 12 month commitments under their respective offers).
- 3) **Monthly Pricing**—In the larger urban/suburban markets, basic cable rate increases that have followed plant upgrade completions have been as high as 8%-10% annually, while DBS prices have largely remained static. As a result, as shown in Figure 3 through a cross-section of cable prices across the larger U.S. markets, basic cable prices which include 60-70 analog cable channels have risen to an average of \$40 per month. This is actually at the level of the most popular DBS packages of DIRECTV and EchoStar, which include 160-170 channels of all-digital video service, 30-35 CD-quality audio channels and an interactive program guide. To equal DBS' product offering with the addition of digital cable, the additional \$10 digital access fee raises cable's pricing to \$50 versus \$40 for DBS (as shown in Figure 3).

The combination of these three changes in the DBS offering have dramatically shifted the price-value comparison between cable and satellite across a majority of the country in DBS' favor, in our view. Specifically, for the average household with multiple TV's in an urban/suburban market, the addition of local channels and reduction in equipment prices have eliminated historical disadvantages of DBS versus cable, while the pricing model differences have provided a strong incentive for consumers to switch from cable to satellite.

In segmenting the market as shown in Figure 4, by the end of this year, we estimate there will be approximately 20 million DBS subscribers and 20 million digital cable subscribers, or 40 million digital pay TV subscribers, out of a universe of 90 million multichannel subscribers (which includes 69

million basic cable subscribers and 20 million DBS subscribers). With only 105 million TV households in the country, implying multichannel penetration of 85%-90% currently, growth for cable and DBS will likely be centered on the remaining 50 million basic analog cable subscribers that don't take digital cable or DBS. To these remaining 50 million subscribers, we believe DBS currently offers a more compelling proposition to switch, as it has significantly more channels/better quality at the same price, while digital cable upgrades require an additional \$10 per month fee for the same increased value. This dynamic is corroborated by several recent studies that have measured consumer perception of value in the DBS product as significantly superior to analog and digital cable.

**Also reinforcing this trend of DBS over digital cable is evidence that digital cable subscriber growth is significantly slowing**, with industry net additions that rose last year by 20% to approximately six million appearing to decline roughly 20% this year to approximately five million. In particular, with growth from cable operators with the highest digital penetrations of approximately 30% showing even sharper declines, we believe digital cable has tapped the "low-hanging fruit" of premium/pay movie analog cable subscribers. This is based on indications that 60%-75% of digital subscribers are premium subscribers and the fact that premium/pay penetration of basic subscribers has traditionally averaged 30%, implying that the majority of premium customers (or 18.0%-22.5% of the 30% premium penetration) have already been upgraded to digital. While digital cable offers significant value to premium customers (by offering multiple screens, or multiplexing, of premium channels, i.e. 6-7 screens of HBO for the same price as one), the ability to tap non-pay movie households appears to be becoming more difficult, particularly given the more favorable price-value relationship of DBS, as discussed above.

### **While HDTV and PVR New Product Cycles Tap High-End Market**

In addition to appealing more broadly to the mass market in urban/suburban parts of the country, DBS has capitalized on the early adopter demand for two potentially explosive new product categories—HDTV (high definition television) and PVRs (personal video recorders, à la TiVo). This reflects the DBS industry's typical lead-to-market advantage over cable (which occurred with interactive TV services, for instance) by virtue of having both ubiquitous national coverage (implying the existence of one headend to upgrade for DBS versus 10,000 cable system headends across the country) and a massive retail distribution infrastructure to leverage.

**High Definition Television (HDTV)**—While still small in numbers, high definition TV sales have begun to take off, with an estimated two million HDTV's sold to date. Anecdotally, a high percentage of these high definition TV sales, which retail for \$3,000-\$6,000 apiece, are complemented with the purchase of DBS systems. DBS has piggy-backed on these retail sales by leveraging its technical advantage over cable of having an all-digital architecture, which yields a superior picture quality to digital cable, that appears to be highlighted on HDTV's. Recall that digital cable is actually a hybrid analog-digital product, with the core 60-80 basic cable channels still broadcast in analog form and the additional 100-150 new channels broadcast

in digital format, albeit at a high compression ratio (partially so as to not highlight a superior picture quality compared to the analog channels). Also benefiting from the sale of DBS with high definition TV's is the obvious incentive to retailers that are commissioned to push satellite sales and the early availability of additional high definition digital content from DBS, as discussed below.

While DBS is capacity-constrained in its ability to eventually carry all local programming in high definition, the inevitable widespread availability of HDTV local signals via over-the-air transmission obviates the needs to replicate the carriage over satellite. Based on the FCC's mandate for the conversion from analog to digital to be completed by 2006, at which point the analog spectrum of the broadcasters is to be reclaimed (provided that 85% of households have digital TV's), it will likely entail a requirement for over-the-air reception to be nearly ubiquitous (since the 10%-15% of U.S. households that receive over-the-air signals today instead of cable or DBS are not likely to be forced to take cable in order to get local channels). Note also that over-the-air digital signal reception has an all-or-nothing feature, as opposed to the potential "snowy" picture typically associated with receiving over-the-air reception via antenna today. Thus, as is the case today for DIRECTV and EchoStar, DBS high-definition tuners will have off-air receivers installed, which will allow nearly ubiquitous reception of high-definition local signals. Thus, we do not see any disadvantage to satellite longer term of being capacity-constrained to offer local high definition signals directly over satellite, with the ability to efficiently integrate DBS service with over-the-air HDTV local signals.

In fact, DBS has been able to exploit its normal first-to-market advantage over cable with HDTV by offering several national networks that have been produced in high definition, such as HBO and Showtime. Both premium movie channels, as well as limited pay-per-view offerings, are offered by each of the DBS providers in high definition, with DIRECTV also offering HDNet (a variety channel formed by Mark Cuban) and EchoStar offering the CBS network feed. Consumers are required to purchase an integrated DBS receiver/HD decoder, which retails for approximately \$500-\$700 that can be used with any HDTV. This incremental cost is also required for advanced digital cable set-tops with high definition capability, as Motorola and Scientific-Atlanta have begun shipping integrated boxes for approximately \$500 (with some operators like Charter and Comcast passing along these costs for an additional fee of \$10 per month), although availability today is limited to a very small percentage of the country.

**Personal Video Recorder (PVR)**—While video on demand (VOD) has been viewed as a significant competitive advantage for cable over DBS (as DBS is inherently disadvantaged with a one-way network and tight bandwidth constraints for interactive services), the early results on VOD have been lackluster. Meanwhile, the competitive response from the DBS industry of using PVR hard drives in the set-top is potentially proving to elicit much greater consumer interest, which leverages significant competitive advantages of satellite over cable. In addition to allowing for VCR functionality (pause, fast forward, rewind) of live television and advanced digital recording, PVR's will also soon allow the satellite provider to download a select number of hit titles to be cached on the hard drive. With a

hard drive currently able to store up to 80 hours of video, which should rise to over 100 hours in the near future given the apparent Moore's Law curve on storage cost trends, a PVR-enabled DBS receiver can easily store the top 20-30 movies and allow access on a VOD-like basis.

The DBS industry is aggressively moving ahead with integrating personal video recorders in receivers, such as TiVo with DIRECTV. EchoStar was the first to offer a receiver with integrated PVR functionality with its DISHPlayer product three years ago and expanded that functionality with the DishPVR 501 receiver last year, which offers 35 hours of recording time. The company's newly updated personal video recorder, known as the DishPVR 508, takes this one step further through the addition of an 80 gigabyte hard disk drive (versus 40 gigabytes in the DishPVR 501). This allows up to 80 hours of recording time, of which EchoStar has reserved 20 hours for caching interactive content, music, software, and advertisements.

With these product offerings, **EchoStar has already reached 500,000 subscribers with PVR-enabled set-tops and is targeting to reach one million by the end of the year.** Driving this, EchoStar plans to even more aggressively deploy the service in 2002, with the offering of a PVR-enabled DBS set-top for a mere \$100 all-in price (compared to free standard equipment currently with a 12-month commitment) and no required monthly fee. This compares to a stand-alone TiVo device that retails for \$399 for the equipment and \$12.95 per month for the service. While appearing to reflect a substantial subsidization of the hard drive cost, EchoStar's planned \$100 pricing actually reflects only a modest increase in subscriber acquisition cost, as the company has been able to engineer the hard drive costs down to nearly \$100 to integrate into its receivers. This is based on an inherent ability to eliminate duplicative memory and processing power costs between the stand-alone PVR (as in a separate TiVo device) and take advantage of its all-digital architecture.

The latter aspect, in particular, highlights a significant advantage of DBS over cable in the integration of PVR technology into set-tops. This reflects the fact that digital cable set-tops are actually hybrid analog-digital boxes that require an inherently higher cost to implement hard drives due to the need to include an additional analog-to-digital converter in the set-top, at an additional estimated \$50-\$100 cost currently. (This is on top of the already higher cost of digital cable set-tops at an average of \$250 compared to DBS receivers at slightly over \$100.) In the case of satellite receivers, which are all-digital, the hard drive records the digital bit stream directly from the satellite, eliminating the need for an extra converter. These factors also provide for much higher quality recording and video output on the television for satellite, or result in the alternative trade-off of requiring significantly greater storage in the hard drive for a cable set-top (or stand-alone PVR) in order to compensate for lesser recording quality.

As in the case of HDTV sales, **DBS has been able to leverage its significant national retail distribution infrastructure to take a several year head start over cable's deployment of PVR technology.** Exacerbating this delay on the cable industry side has been the sluggish pace of innovation from the industry's two main set-top suppliers—Motorola and Scientific-Atlanta—which have stymied open standards from developing that would drive down



set-top box costs (which are more than twice the level of satellite, as mentioned above), open up retail distribution and stimulate technology improvements. Thus, as several cable operators have defensively begun ordering PVR-integrated digital set-tops, the cost of these boxes in the \$500-\$650 range and lack of retail distribution have resulted in a \$10 monthly fee, which further extends the pricing gap between DBS and digital cable, outlined above.

### **While Broadband Remains a Disadvantage, DBS Is Making Strides**

Broadband remains the satellite industry's main Achilles' heel vis-à-vis cable, although the industry is making strides towards addressing its disadvantage in this area. **Satellite transmission of two-way data has long been cost disadvantaged** in two critical respects—space segment costs have made the cost per bit, and ultimately per subscriber, prohibitively expensive, while the ground segment costs to add a transmitter for return path capability to a traditional one-way receiver has pushed equipment costs into the \$600-\$800 neighborhood. EchoStar and Hughes have been offering two-way high speed Internet access over Ku-band satellite frequencies through DIRECTWAY and StarBand, respectively, which have garnered 110,000 subscribers and 40,000 subscribers, respectively. The product is packaged in the form of an integrated dish (which is elliptical at 21-24 inches across) through which the consumer can receive digital video to the TV and high speed data to the PC with download speeds at about 400 kbps and upstream throughput of 128 kbps. The product is deployed through the use of current generation Ku-band satellites, with upfront equipment pricing at \$600-\$800 and monthly pricing in the \$60-\$70 range, reinforcing the aforementioned major cost disadvantages. These factors have relegated marketing efforts toward rural areas, where competition from DSL and cable modems is largely non-existent.

**Ku-band satellites have been viewed as interim technology until the evolution of Ka-band frequencies with next-generation satellites**, highlighted by EchoStar's recent decision to discontinue selling the StarBand product. Hughes has led the most aggressive Ka-band effort through its \$1 billion-to-date investment in SPACEWAY, which is planned for commercial launch in 2003. SPACEWAY promises two-way interactive capability, with bigger payload satellites, increased capacity and spot-beam technology (to allow frequency reuse) to allow faster speeds and a reduction in effective costs per bit, or per subscriber (based on an estimated 8-10 times increased efficiency of satellite capacity). EchoStar had an investment in WildBlue Communications, which was planning to launch a Ka-band service this year, although this has been written off based on funding shortfalls. Both DIRECTV and EchoStar have obtained Ka-band frequencies at neighboring locations to their primary slots, setting up the eventual possibility of integrating bandwidth on demand applications like VOD, interactive games, etc., with the traditional television services on one dish.

**In the more urban areas, where satellite technology is likely to remain disadvantaged, DBS and DSL (digital subscriber line) technologies appear to be logical complements** against their common competitors in cable. The limited bandwidth and distance restrictions inherent in DSL's twisted pair copper architecture cannot currently provide video service cost effectively,



while DBS, with its broadcast architecture, is extremely cost effective at broadcasting video, but relatively inefficient at providing point-to-point communications, like internet access. Recognizing these logical synergies, EchoStar recently signed agreements with SBC and Earthlink, which entail offering consumers a bundled package of DBS and DSL with a \$10 discount off the combined price. The bundled DBS-DSL product pricing could essentially blunt cable's digital video-cable modem bundle from a consumer standpoint, which also reflects a \$10 discount (as purchasing cable modem without basic cable typically entails a \$10 higher price point). While DBS-RBOC relationships in the past have generally been unsuccessful, as in the case of DIRECTV's deals years ago in which Bell Atlantic and SBC agreed to resell DIRECTV service, and the pair cannot realize the benefits of leveraging the same network as cable does, we believe these alliances offer the potential to narrow DBS' major disadvantage vis-à-vis cable. This stems from the increasing necessity by the RBOCs to find a video alternative, in light of cable's gradual encroachment with cable telephony, which has been demonstrated by Cox and AT&T Broadband to lead to a 30% share of the local telephone market for cable within a few years of launch through discounting.

From DBS' perspective, the RBOC relationships also offer a path to eventually offer voice telephony, either through direct bundling agreements with the RBOCs or through emerging voice over DSL technology. Further, DSL appears to be a longer-term viable solution to providing a high speed, real-time return capability to the DBS video product offering. As an example, EchoStar's latest top-of-line receiver, the DISH Network PRO 701, is equipped with a built-in DSL modem, allowing for broadband Internet access on the television and more advanced interactive features. Over time, the integrated DSL modem will allow the possibility of offering true server-based video on demand as compression techniques advance to enable TV-quality video over the 500 kbps guaranteed speed capability of most DSL technologies. As a result, we view the recently announced bundling arrangements by EchoStar as the first of a gradual set of partnerships to be formed with all the RBOCs in order to create a national alliance versus cable.

### **Highlighting the Industry's Improving Sub Growth Quality Are Improvements in All Key Operating Metrics...**

Highlighting the industry's improving subscriber growth quality characteristics are improvements in almost all key operating metrics—ARPU, PMCF, churn and SAC. In particular, as illustrated in Figures 5, EchoStar and DIRECTV have shown dramatic improvements over the last year in ARPU and pre-marketing cash flow margins, while keeping churn and SAC stable to down.

On the average revenue per subscriber (ARPU) front, the industry has benefited from the introduction of local channels, which are generally offered for \$4-\$6 per month, as over one-half of both DIRECTV and EchoStar's subscriber bases have added local channels since introduction in early 2000. As a result, from 1999 through today, ARPU has risen from \$49 to \$57 at DIRECTV and from \$43 to \$50 at EchoStar. As mentioned above, as a result of cable's 6%-8% annual price increases over the last several years, versus 1%-

2% average annual rate increases for DBS, we believe a substantial pricing umbrella has emerged, providing significant flexibility for DBS to enjoy price increases over the next several years.

**Pre-marketing cash flow (PMCF)** margins have risen over the last two years from the realization of significant scale economies in such areas as customer service and from the high incremental margin/flow-through effect from rising ARPU's discussed above. EchoStar PMCF margins have consistently remained above those of DIRECTV, rising from 36% in 1999 to 43% currently, while DIRECTV's have risen from 33% in 1999 to 35% most recently. (DIRECTV has actually reported higher PMCF margins of 39%-40%, although these are before accounting for customer retention and premium upgrade marketing expenses which are commonly deducted to derive PMCF by others in the industry.)

**Churn** figures have shown a dramatic turnaround from peaking in the range of 1.7%-2.0% in mid-2001 to 1.5%-1.6% most recently. Driving this reduction has been significant changes in the industry's sales and distribution models, including the elimination of unprofitable sales channels on the distribution side, the emphasis on leased equipment models and the nearly universal requirement for one-year commitments (or, if not, a substantial upfront cash investment by the customer in equipment).

After rising dramatically on a straight-line trend from 1998 levels of \$300 to roughly \$550 in 2001, **subscriber acquisition costs (SAC)** have begun to stabilize and even show signs of reversal. The industry has taken a hard-line approach to set-top manufacturers and retailers that had benefited from fiercely escalating competition between DIRECTV and EchoStar over the last several years. DIRECTV, in particular, has outlined a target of reducing SAC from peak levels of \$575 last year to \$525 this year, while at the same time generally improving consumer offers, which is due primarily to the elimination of manufacturing subsidies equaling approximately \$35 per gross addition (which will be spread between equipment vendors and retailers). EchoStar's total SAC, including capitalized equipment costs, after rising from under \$300 in 1998 to \$520 in 2001, is showing signs of leveling off this year in the \$550 range. Critically important to note is that not only are subscriber acquisition costs plateauing, but **the profile of new subscribers is of significantly increased quality**. Specifically, new additions are generally signing 12-month commitments and taking a significantly higher number of boxes—consistent with the trend mentioned above of the industry tapping more deeply into the mainstream of larger households with multiple TV's—which has proven to translate into higher ARPU and lower churn. Thus, the industry appears to be investing roughly the same dollar as it has in the last two years, but with the prospects for much greater long-term return.

### **Which Underlie an Explosion in Profitability That the Industry Is Undergoing...**

The aforementioned improvements underlie an explosion in profitability that the industry is undergoing, evidenced both by the breakout in EBITDA, spurred by significant operating leverage, and an imminent pending turn toward substantial free cash flow and earnings generation, given the inherent

fixed capital cost leverage of the business. The industry has reached a critical mass point of roughly 18 million subscribers and subscriber additions have begun to level off, triggering an explosion in operating cash flow (EBITDA) from approximately \$800 million in 2001 on an industry basis (versus a modest loss in 2000) to roughly \$1.6 billion in 2002 and \$2.7 billion in 2003, as displayed in Figure 6.

Based on average revenue per subscriber ranging from \$50 per month currently for EchoStar to \$57 per month for DIRECTV and pre-marketing cash flow margins of approximately 43% and 35%, respectively, both providers average annual pre-marketing cash flow (before subscriber acquisition costs) of approximately \$250 per subscriber. This suggests payback periods on \$550 per subscriber acquisition costs of just over two years, roughly in line with the historical phenomenon, as rising acquisition costs have been offset by rising ARPU's and pre-marketing cash flow margins. However, the reduction in monthly churn to 1.6% on an industry basis from 1.8% last year, actually implies marginal churn from subscribers added over the last year has declined even more significantly. This suggests an expansion in the average life of a subscriber from under five years on the margin a year ago to well over that time frame now. Thus, **returns on incremental invested capital have been reversed toward a rapidly rising trend, while still sustaining impressive market share gains, setting the stage for significant bottom-line profitability.**

With low upfront invested capital requirements, evidenced by EchoStar gross PP&E of \$2.5 billion currently, or \$350 per subscriber, and very modest ongoing capital requirements (primarily for capitalized SAC and new satellites to expand into new services), **the DBS industry is turning the corner on generating positive free cash flow and earnings.** EchoStar, as more of a pure play than Hughes/DIRECTV provides the most visible illustration, as the company is swinging from a loss of \$(0.45) per share in 2001 to positive earnings estimated for this year to a projected roughly \$1.00 EPS figure for 2003 (before accounting for the impact of the proposed Hughes merger transaction). Free cash flow is only slightly behind earnings generation (as capital expenditures currently exceed depreciation given the current construction of satellites), as we project EchoStar to generate positive free cash flow this year of \$65 million from a deficit of \$148 million in 2001, rising to \$350 million in 2003 (or \$0.63 per share).

### **...And Which Consolidation Stands to Significantly Leverage**

The prospects for consolidation under **the proposed merger of EchoStar and Hughes Electronics/DIRECTV would substantially leverage the aforementioned subscriber growth and profitability dynamics.**

On the subscriber growth side, with the capacity synergies envisioned under their proposed merger, EchoStar and DIRECTV have announced plans to expand local signals from the top 44 markets where currently available, or 60% of the country, to all 210 markets in the U.S., with the top 100 markets expected (equating to 85% of the country) to be launched one year following merger completion and all 210 markets within two years of close. Given the dramatic unleashing of pent-up demand in the urban/suburban markets following the launch of local signals in early 2000, highlighted by the seismic

shift in subscriber growth over the last two years toward the larger markets, as depicted in Figure 1, EchoStar has targeted the potential to expand DBS penetration in rural areas through the merger. This is particularly the case given that the low density characteristics of cable systems in these areas make the economic prospects for justifying cable rebuilds required to offer advanced digital video and high speed data services untenable, leaving these systems particularly vulnerable to DBS competition if local channels become available.

**Specifically, EchoStar has estimated that the merger transaction would result in an incremental 9.4 million DBS subscribers.** This would be reached through a combination of the higher penetrations in new local-to-local markets (based on the company's experience of realizing a 10% increase in penetration in areas where it has introduced local-to-local signals), lower churn, and a more compelling value proposition to the consumer via a widespread rollout of PVR and other interactive functionality, as well as broadband access. On the cost side of the merger benefits, potential reductions have been identified in programming costs, subscriber acquisition costs, subscriber churn and general and administrative expenses. **EchoStar management has valued these potential synergies at up to \$56 billion in total on a net present value basis** based on an expected \$5.0 billion in incremental operating cash flow (EBITDA) by 2005, which was split between \$36 billion in net present value of cost savings and \$20 billion in the net present value of revenue synergies. To be netted against this figure is an expected cost of up to \$1.5-\$2.0 billion in box replacement costs in order to move to a common platform and realize full synergies of the combined channel capacity of the two companies.

### **Valuations Appear Extremely Attractive...**

With the merger outcome expected to be resolved by the late third quarter/early fourth quarter of this year, we believe removal of the overhanging uncertainty of the transaction is likely to shift attention to the aforementioned improving fundamental picture of the DBS industry, highlighted by a focus on 2003 profitability metrics—EBITDA, EPS and FCF—which should also offer meaningful valuation metrics. In particular, for the first time in its history, is the applicability of an enterprise value to EBITDA multiple valuation methodology. This should provide greater transparency with traditional media companies, particularly the cable sector, and in our view, highlight the group's attractive valuation. Specifically, with EchoStar and Hughes/DIRECTV selling at 10-12 times 2003 EBITDA, as displayed in Figure 7, versus five-year compound annual EBITDA growth prospects of 20%-30% beyond 2002, we believe these valuation dynamics are likely to spark interest among growth and value buyers. This is particularly the case given the emergence of meaningful free cash flow and earnings next year, as **EchoStar is currently trading at approximately 25 times 2003 earnings, with forward five-year compound annual earnings growth estimated at 25%-30%.**

Corroborating the attractiveness of DBS valuations, in our view, are the implied trading multiples on the basis of enterprise value per year-end 2002 projected subscribers in the range of \$1,400-\$1,700 per subscriber, compared to cable valuations of \$3,000-\$3,500 per basic subscriber. While this

comparison can be misleading, we believe a closer analysis highlights a significant disconnect in valuations. As a short-cut form of a discounted cash flow analysis, per subscriber values are meant to take into account the future cash flow generation of a subscriber, which in the case of cable should eventually reflect significantly higher average revenues per subscriber and cash flow margins. Specifically, our estimates of average revenue per basic subscriber for the larger cable operators eventually approach \$100 per month, based on significant upselling of cable's new products, compared to our estimates for DIRECTV and EchoStar to reach ARPU's of \$60 per month by 2008. Further, longer-term cable EBITDA margins of 40%-45%, on average, should inherently exceed those of DBS, which we estimate in the 30%-40% range (given that DBS expenses the vast majority of SAC costs, which if accounted for in a similar fashion, would roughly equalize long-term margins). Thus, we estimate annual EBITDA per subscriber by 2008 of approximately \$500 for cable and \$250 for DBS. This is partially offset by significantly higher ongoing capital expenditures per cable subscriber, which we have separately modeled at \$150 versus \$10 for DBS (based on depreciated satellite replacement costs per subscriber). After fully taxing both figures, we derive unlevered free cash flow per subscriber estimates of about \$200 for cable versus \$150 for DBS. If we place a comparable terminal free cash flow multiple on these figures and discount back at a similar rate, an enterprise value per basic subscriber for both is derived. We would then adjust the DBS enterprise value per subscriber by a factor of roughly 1.5 times to account for the net present value of a near doubling expected in the DBS subscriber base from today (while applying a cable adjustment factor of 1.0 given no growth expected in basic subscribers). **This would effectively justify a premium for DBS over cable on an enterprise value per subscriber basis, as opposed to a current 50% discount,** as the higher ARPU and EBITDA generation of a cable subscriber over time would be at least offset by the capital efficiency and remaining subscriber growth opportunity for DBS.

Finally, reinforcing the attractiveness of DBS valuations, in our view, are the attractive upsides implied to our estimated target prices. In the case of EchoStar, we apply a discounted cash analysis—which uses the inputs outlined in Figures 2 and 6, including 11 times terminal EBITDA multiples and 10% discount rates—to derive a 12-month target price of \$50 per share that implies a multiple of 20 times 2003 EBITDA and \$3,000 per subscriber. Our target price for Hughes of \$36.50 per share is based on applying the proposed merger exchange ratio of 0.73 DISH shares per GMH share to our EchoStar target price.

### **And Investment Outlook Is Improving**

With evidence of steadily higher quality subscriber growth marked by reduced churn and subscriber acquisition costs and the dramatic emergence of operating cash flow profitability, to be followed by earnings and free cash flow, all of which are likely to be levered by industry rationalization through a EchoStar/Hughes Electronics merger combination, we believe the DBS stocks are poised for a substantial rebound.

In addition, the aforementioned competitive factors vis-à-vis cable have historically been a primary factor in the DBS group's stock performance, as

the market has seemed to develop a mutually exclusive view on the two industries, as displayed in Figure 8. The explosive entrance of DBS as a competitor to cable in 1994 and subsequent endorsements from investments by AT&T in DIRECTV in addition to the ASkyB (owned by News Corp./MCI) merger with EchoStar—which immediately became labeled “Death Star”—catapulted the DBS stocks while casting a long shadow over cable stocks. That trend was almost immediately reversed in June 1997, by Microsoft's investment in Comcast, which was followed by further strategic endorsements by AT&T and Paul Allen, subsequently sending the DBS stocks into a long drought. Subsequently, in late 1999/early 2000 (the last period in which we took a cautious view on the cable sector), DBS re-emerged as a stronger competitive threat through consolidation into a duopoly structure (with only DIRECTV and EchoStar remaining) and reacceleration in subscriber growth driven by the introduction of local channels in the major markets. By late 2000, coincident with cable's explosion in digital cable and cable modem subscriber additions and a slowdown in DBS subscriber additions, the stocks reversed again under typical inverse trading fashion.

Most recently, as indicated in Figure 8, **cable stocks have begun to underperform DBS, as several important trends appear to be unfolding:** recent DBS subscriber results are showing signs of improvement (increasingly at the expense of basic cable unit growth); DBS consolidation is set to occur with the proposed merger of EchoStar and Hughes/DIRECTV; and the recent EchoStar and SBC DSL bundling agreements have suggested the potential for DBS/RBOC alliances (which could address DBS's major shortcomings vis-à-vis cable in potentially adding data and telephony). Potentially further exacerbating these dynamics is the relative valuation gap between the two sectors becoming more transparent, as outlined above, as the exploding profitability of the DBS industry indicates 2003 trading multiples of 10–12 times EBITDA, at or below cable levels, despite DBS having faster EBITDA growth for the next several years, as well as meaningful free cash flow and net income next year.

**EchoStar stands out as our only Top Pick-rated stock across the entire cable and satellite universe,** offering a valuation on a stand-alone basis (without assuming the merger transaction effects) of 10–11 times 2003 EBITDA and 25 times 2003 earnings, relative to compound annual growth prospects of 20%–30% on each metric over the next five years. We also view Hughes/DIRECTV's current valuation as attractive. With reinforcing evidence of improvements in DIRECTV's operating performance following recent management changes, we view Hughes as having an improving downside case under a failed merger scenario, while offering a significant takeout premium under a successful merger with EchoStar, given a current 22% arbitrage spread discount.

Below we outline a framework of the important trends, which we define as the “4 C's”, that underlie our view of an improving DBS industry outlook.

**Figure 1 Comparison of DBS Penetration in Rural and Metropolitan Areas**

	U.S. TV Homes	1999E DBS Subs	2000E DBS Subs	2001E DBS Subs	2002E DBS Subs	Long Term Expectation	Merger Potential
Rural	33,000	6,652	7,653	8,250	8,621	12,038	20,000
• % DBS Penetration	—	20%	23%	25%	26%	36%	61%
• % of Annual Growth	—	—	30%	25%	15%	33%	56%
Metropolitan	72,000	4,794	7,128	8,920	11,024	17,962	20,000
• % DBS Penetration	—	7%	10%	12%	15%	25%	28%
• % of Annual Growth	—	—	70%	75%	85%	67%	44%
<b>Total U.S.</b>	<b>105,000</b>	<b>11,446</b>	<b>14,781</b>	<b>17,170</b>	<b>19,645</b>	<b>30,000</b>	<b>40,000</b>
• % DBS Penetration	—	11%	14%	16%	19%	29%	38%

Source: Deutsche Bank Securities Inc. estimates and company information



Figure 2 DBS Industry Subscriber Model

	1998A	2000A	2001A	2001A	2001A	2001A	2001A	2001A	2002A	2002E	2002E	2002E	2002E	2003E	2003E	2003E	2003E	2007E	2009E
End of Period Sube																			
DIRECTV WRTC - Pegasus	702	1,403	1,440	1,461	1,486	1,519	1,519	1,400	1,413	1,434	1,460	1,460	1,460	1,515	1,564	1,508	1,646	1,680	1,708
DIRECTV WRTC - Non-Pegasus	712	329	360	379	374	361	361	370	367	366	370	370	378	380	383	383	387	387	
DIRECTV WRTC Subtotal	1,414	1,732	1,800	1,840	1,870	1,900	1,900	1,770	1,780	1,800	1,830	1,830	1,838	1,945	1,991	2,032	2,086	2,086	
DIRECTV O&O	5,268	7,780	7,880	7,964	8,050	8,440	8,440	8,780	8,835	9,320	9,640	9,640	10,486	11,245	11,896	12,463	12,950	13,356	
DIRECTV Total	6,682	8,521	8,680	8,844	8,920	10,340	10,340	10,560	10,615	11,150	11,470	11,470	12,389	13,386	13,847	14,466	16,017	16,462	
EchoStar	3,416	5,260	5,720	5,870	6,430	6,830	6,830	7,165	7,465	7,880	8,175	8,175	9,280	10,277	11,126	11,872	12,819	13,865	
Total End of Period DBS Sube	18,882	14,781	16,200	16,716	16,350	17,170	17,170	17,725	18,280	18,920	19,645	19,645	21,068	22,457	23,611	24,366	27,426	28,317	
% Change Yr. / Yr.																			
DIRECTV WRTC - Pegasus	61.3%	89.9%	79.8%	21.8%	14.5%	8.3%	8.3%	-3.8%	-3.2%	-4.1%	-3.8%	-3.8%	3.8%	3.2%	2.6%	2.4%	2.0%	1.7%	
DIRECTV WRTC - Non-Pegasus	27.2%	-53.6%	-47.3%	7.2%	10.0%	15.7%	15.7%	2.7%	-3.3%	-2.1%	-2.9%	-2.9%	1.7%	1.2%	0.8%	0.5%	0.3%	0.1%	
DIRECTV WRTC Subtotal	42.1%	22.5%	21.1%	16.3%	13.3%	9.7%	9.7%	-1.7%	-3.3%	-3.7%	-3.7%	-3.7%	3.3%	3.2%	2.9%	2.4%	2.0%	1.7%	
DIRECTV O&O	52.1%	47.9%	30.7%	16.9%	9.6%	8.4%	8.4%	14.5%	15.8%	18.6%	14.2%	14.2%	8.9%	7.1%	5.5%	4.4%	3.9%	3.2%	
DIRECTV Total	48.9%	42.5%	28.8%	16.9%	10.3%	8.9%	8.9%	11.6%	12.2%	12.1%	10.6%	10.6%	8.6%	6.9%	5.3%	4.4%	3.8%	3.4%	
EchoStar	78.8%	64.3%	48.8%	48.8%	34.9%	29.8%	29.8%	28.3%	23.8%	21.3%	16.7%	16.7%	16.7%	13.7%	10.8%	8.3%	6.7%	6.4%	4.4%
Total End of Period DBS Sube	87.7%	66.9%	38.4%	23.1%	16.9%	16.2%	16.2%	18.2%	18.6%	15.7%	14.4%	14.4%	16.4%	16.4%	16.2%	8.6%	6.4%	6.4%	3.9%
Market Share																			
DIRECTV WRTC - Pegasus	7.0%	9.5%	9.5%	9.3%	9.2%	8.8%	8.8%	7.9%	7.7%	7.6%	7.4%	7.4%	7.0%	6.7%	6.4%	6.2%	6.1%	6.0%	
DIRECTV WRTC - Non-Pegasus	7.1%	2.2%	2.4%	2.4%	2.3%	2.3%	2.2%	2.1%	2.0%	1.9%	1.9%	1.9%	1.9%	1.7%	1.6%	1.5%	1.4%	1.4%	
DIRECTV WRTC Subtotal	14.0%	11.7%	11.9%	11.7%	11.4%	11.1%	11.1%	10.0%	9.7%	9.5%	9.3%	9.3%	8.7%	8.3%	8.0%	7.7%	7.5%	7.4%	
DIRECTV O&O	52.2%	52.7%	50.5%	49.8%	49.2%	49.2%	49.2%	49.8%	49.8%	49.4%	49.3%	49.1%	49.1%	48.4%	47.8%	47.6%	47.3%	47.0%	46.9%
DIRECTV Total	66.2%	64.4%	60.4%	61.4%	60.7%	60.2%	60.2%	60.6%	60.5%	60.0%	59.8%	59.4%	59.4%	57.1%	54.3%	54.5%	54.6%	54.2%	
EchoStar	33.8%	35.6%	37.8%	38.6%	39.2%	39.8%	39.8%	39.4%	38.4%	41.2%	41.7%	41.7%	41.8%	42.9%	43.8%	44.9%	46.0%	46.4%	48.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Internal Net Additions																			
DIRECTV WRTC - Pegasus	153	178	36	21	36	23	115	0	13	21	26	60	66	48	43	38	34	29	
DIRECTV WRTC - Non-Pegasus	192	82	15	19	89	7	36	(8)	(3)	(1)	4	80	8	4	3	2	1		
DIRECTV WRTC Subtotal	345	261	51	40	30	30	151	(8)	10	20	30	140	74	52	46	41	35	30	
DIRECTV O&O	1,261	1,800	280	120	380	1,192	1,192	245	245	285	320	1,000	858	747	697	587	487	418	
DIRECTV Total	1,606	2,061	331	160	410	1,222	1,343	237	255	305	350	1,140	933	800	743	627	522	448	
EchoStar	1,479	1,880	489	389	389	489	1,479	233	289	338	375	1,348	1,134	978	882	743	628	544	
Total Internal Net Additions	3,076	3,941	820	549	793	629	2,812	677	544	644	725	2,488	2,043	1,779	1,549	1,361	1,169	991	
% Change Yr. / Yr.																			
DIRECTV WRTC - Pegasus	75.0%	16.3%	71.4%	-30.4%	-28.8%	-68.8%	-38.2%	-100.0%	-38.9%	-41.2%	13.0%	28.7%	-4.1%	-11.3%	-11.3%	-11.2%	-12.8%	-13.1%	
DIRECTV WRTC - Non-Pegasus	5.6%	-87.2%	-28.3%	21.3%	-133.5%	-22.2%	-43.3%	-183.3%	-115.9%	-82.9%	-42.9%	-122.4%	-176.8%	-27.8%	-30.2%	-34.6%	-42.7%	-57.3%	
DIRECTV WRTC Subtotal	26.3%	-36.1%	21.7%	-20.0%	-56.2%	-48.4%	-37.5%	-115.7%	-75.0%	-53.3%	0.0%	-68.9%	17.9%	-13.9%	-12.9%	-12.8%	-14.1%	-14.6%	
DIRECTV O&O	42.0%	26.3%	20.4%	-70.1%	2.8%	-12.4%	-20.2%	21.1%	104.2%	-37.9%	-17.9%	0.7%	-28.8%	-13.0%	-12.9%	-12.8%	-14.1%	-14.6%	
DIRECTV Total	58.3%	14.2%	-16.9%	-46.9%	-48.9%	-38.3%	-38.8%	8.6%	86.9%	-27.9%	-18.7%	-4.8%	-36.8%	-13.8%	-12.9%	-12.8%	-14.1%	-14.6%	
EchoStar	35.3%	28.9%	1.1%	-31.3%	-28.9%	-19.8%	-18.1%	-37.2%	-14.3%	-4.9%	-4.3%	-10.0%	-16.8%	-13.8%	-12.9%	-12.8%	-14.1%	-14.6%	
Total	46.8%	19.8%	-7.8%	-43.1%	-13.8%	-19.3%	-28.9%	-18.4%	9.8%	-18.3%	-11.9%	-19.8%	-31.3%	-13.8%	-12.9%	-12.8%	-14.1%	-14.6%	
% of Internal Net Additions																			
DIRECTV WRTC - Pegasus	5.0%	4.6%	4.9%	4.0%	4.4%	2.8%	4.0%	0.0%	2.3%	3.3%	3.6%	2.3%	2.7%	2.8%	2.6%	2.9%	2.9%	3.0%	
DIRECTV WRTC - Non-Pegasus	6.2%	1.7%	1.9%	3.8%	-0.7%	0.9%	1.2%	-1.2%	-0.5%	-0.2%	0.6%	-0.3%	0.3%	0.3%	0.2%	0.2%	0.1%	0.1%	
DIRECTV WRTC Subtotal	11.2%	6.3%	6.4%	7.8%	3.6%	3.7%	5.2%	-1.2%	1.8%	3.1%	4.1%	2.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
DIRECTV O&O	41.0%	43.2%	38.1%	23.5%	30.2%	47.6%	40.9%	51.7%	44.1%	44.5%	44.1%	48.2%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	
DIRECTV Total	52.2%	49.5%	42.8%	31.4%	64.9%	81.2%	46.1%	66.8%	66.4%	47.7%	48.3%	48.3%	48.8%	48.8%	48.8%	48.8%	48.8%	48.8%	
EchoStar	47.8%	50.2%	37.5%	58.6%	48.8%	48.8%	53.8%	48.8%	48.1%	52.3%	51.7%	51.8%	53.8%	54.0%	54.9%	54.9%	54.9%	56.9%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Gross Additions																			
DIRECTV WRTC - Pegasus	264	343	110	97	103	83	403	72	83	91	86	341	346	354	361	368	375	381	
DIRECTV WRTC - Non-Pegasus	342	180	44	64	10	6	123	13	17	20	25	75	82	82	83	83	84	84	
DIRECTV WRTC Subtotal	606	523	154	161	112	100	527	85	100	110	121	416	428	436	444	452	459	465	
DIRECTV O&O	2,117	2,858	866	584	841	810	2,821	784	898	739	775	2,184	2,828	2,900	2,988	3,037	3,085	3,140	
DIRECTV Total	2,723	3,381	940	745	953	819	3,348	869	798	849	896	2,598	3,256	3,336	3,413	3,489	3,563	3,603	
EchoStar	1,878	2,868	884	684	738	738	2,747	819	882	713	734	2,388	2,798	2,824	2,947	2,978	3,027	3,082	
Total Gross Additions	4,601	6,249	1,824	1,429	1,691	1,558	6,106	1,688	1,680	1,562	1,630	4,986	6,054	6,170	6,339	6,488	6,691	6,784	
% Change Yr. / Yr.																			
DIRECTV WRTC - Pegasus	83.9%	29.9%	120.0%	40.7%	4.9%	-26.0%	17.7%	-34.3%	-14.8%	-10.7%	2.4%	-15.4%	1.9%	2.2%	2.1%	2.0%	1.8%	1.6%	
DIRECTV WRTC - Non-Pegasus	13.9%	-83.3%	-22.0%	49.7%	-72.5%	-75.8%	-22.7%	-71.1%	-73.3%	-11.7%	289.4%	-38.9%	10.0%	0.4%	0.4%	0.5%	0.5%	0.5%	
DIRECTV WRTC Subtotal	36.5%	-17.0%	84.7%	-44.1%	-15.3%	-34.5%	4.9%	-44.8%	-38.0%	-1.7%	21.3%	-21.1%	3.1%	1.8%	1.8%	1.7%	1.5%	1.4%	
DIRECTV O&O	37.7%	36.0%	6.0%	-14.7%	13.5%	3.2%	2.2%	-11.4%	17.4%	-12.1%	-4.1%	1.8%	-4.8%	2.5%	2.4%	2.3%	1.9%	1.7%	
DIRECTV Total	37.4%	23.4%	11.4%	-6.4%	6.1%	-2.9%	3.9%	1.1%	6.5%	-18.8%	-1.6%	-2.8%	-3.7%	2.8%	2.3%	2.2%	1.8%	1.7%	
EchoStar	78.2%	36.2%	17.8%	8.2%	5.4%	2.2%	7.8%	-18.6%	8.9%	4.3%	2.9%	4.7%	1.2%	2.7%	2.6%	2.5%	2.0%	1.9%	
Total	48.2%	28.6%	14.1%	-0.9%	7.4%	-0.7%	4.7%	-3.8%	3.3%	-4.8%	0.8%	-1.4%	-1.9%	2.8%	2.4%	2.3%	1.9%	1.7%	
Churn																			
DIRECTV WRTC - Pegasus	1,865	1,265	1,745	1,765	1,515	1,555	1,645	1,725	1,815	1,835	1,805	1,855	1,835	1,855	1,875	1,895	1,715	1,735	
DIRECTV WRTC - Non-Pegasus	2,005	1,705	1,725	1,385	1,355	-0,085	1,975	1,845	1,815	1,895	1,925	1,865	1,705	1,725	1,745	1,785	1,765	1,605	
DIRECTV WRTC Subtotal	1,845	1,385	1,945	2,215	1,440	1,225	1,715	1,745	1,895	1,665	1,855	1,855	1,865	1,845	1,865	1,685	1,705	1,725	
DIRECTV O&O	1,705	1,955	1,895	2,005	1,905	1,705	1,885	1,805	1,855	1,855	1,805	1,835	1,835	1,865	1,745	1,895	1,715	1,735	
DIRECTV Total	1,735	1,865	1,885	2,245	1,825	1,615	1,835	1,835	1,865	1,665	1,615	1,845	1,845	1,895	1,675	1,645	1,715	1,735	
EchoStar	1,295	1,295	1,295	1,725	1,725	1,615	1,825	1,265	1,865	1,865	1,865	1,865	1,865	1,865	1,865	1,865	1,865	1,865	
Total	1,585	1,495	1,585	1,825	1,785	1,615	1,785	1,525	1,585	1,865	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	

Source: Deutsche Bank Securities Inc. estimates and company information



Figure 3 DBS vs. Digital Cable Offering Comparisons

[illegible]

Source: Deutsche Bank Securities Inc. estimates and company information



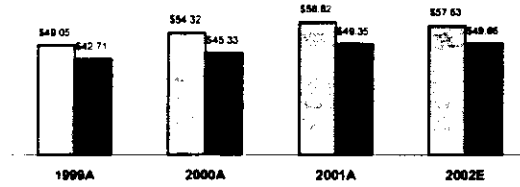
Table 1.4 DBS Versus Cable Subscriber Projections

	1997A	1998A	1999A	2000A	2001A	2002A	2003A	2004A	2005A	2006A	2007A	2008A
<b>Total TV Households</b>	96,000	99,600	100,802	102,200	103,025	103,850	104,675	105,500	106,325	107,150	107,975	108,800
- % Change Year-Over-Year	1.1%	1.6%	1.2%	1.4%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
<b>Total Pay TV Subscribers</b>	71,087	74,794	78,746	83,281	83,791	84,300	85,078	86,013	86,954	87,895	88,836	89,777
- % Change Year-Over-Year	4.8%	5.2%	5.3%	5.8%	0.6%	0.9%	0.9%	1.1%	1.1%	1.1%	1.1%	1.1%
- % of Total TV Households	72.5%	75.1%	78.1%	81.3%	81.3%	81.3%	81.3%	81.5%	81.5%	81.5%	81.5%	81.5%
<b>Total Digital Pay TV Subscribers</b>	6,287	9,907	14,957	23,432	25,875	27,407	29,459	31,796	33,546	35,293	37,040	38,787
- % Change Year-Over-Year	48.0%	57.6%	51.0%	58.7%	9.2%	7.3%	7.0%	7.1%	5.2%	5.0%	4.7%	4.5%
- % of Total Pay TV Subscribers	8.8%	13.2%	19.0%	28.1%	30.8%	32.5%	34.6%	37.0%	38.7%	40.5%	42.3%	44.4%
<b>Basic Cable Subscribers</b>	64,800	66,100	67,300	68,500	68,591	68,620	68,729	68,843	68,943	69,043	69,143	69,243
- % Change Year-Over-Year	2.0%	2.0%	1.8%	1.8%	0.1%	0.0%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
<b>Digital Cable Subscribers</b>	---	---	---	---	---	---	---	---	---	---	---	---
- % Penetration of Basic Subscribers	---	---	---	---	---	---	---	---	---	---	---	---
<b>Digital Cable Net Additions</b>	---	---	---	---	---	---	---	---	---	---	---	---
- % Change Year-Over-Year	---	---	---	---	---	---	---	---	---	---	---	---
<b>DBS Subscribers</b>	---	---	---	---	---	---	---	---	---	---	---	---
<b>DBS Subscribers</b>	---	---	---	---	---	---	---	---	---	---	---	---
- % Change Year-Over-Year	---	---	---	---	---	---	---	---	---	---	---	---
<b>DBS Subscribers</b>	---	---	---	---	---	---	---	---	---	---	---	---
- % Change Year-Over-Year	---	---	---	---	---	---	---	---	---	---	---	---

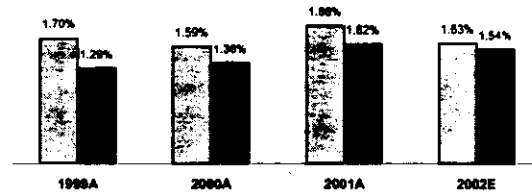
Source: Deutsche Bank Securities Inc. estimates and company information

**Figure 5: Improving DBS Operating Metrics****Average Revenue Per Subscriber**

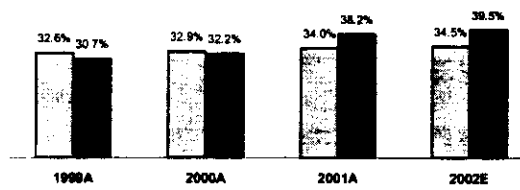
□ DIRECTV  
■ EchoStar

**Monthly Churn**

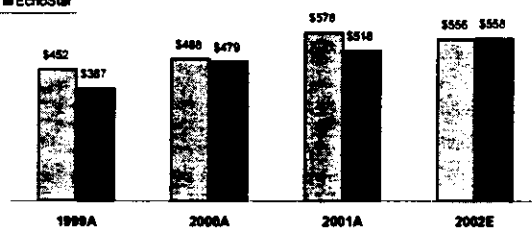
□ DIRECTV  
■ EchoStar

**Pre-Marketing Cash Flow Margin**

□ DIRECTV  
■ EchoStar

**Total Sub Acquisition Cost (SAC) Per Gross Add (Incl. Expensed/Capitalized)**

□ DIRECTV  
■ EchoStar



Source: Deutsche Bank Securities Inc. estimates and company information



Figure 6 DBS Industry Operating Model

	1998A	2000A	1Q01A	2Q01A	3Q01A	4Q01A	2001A	1Q02A	2Q02E	3Q02E	4Q02E	2002E	2003E	2004E	2005E	2006E
<b>Revenue</b>																
DIRECTV NRTC - Pegasus	\$286.4	\$582.1	\$205.8	\$206.0	\$206.6	\$210.8	\$838.2	\$218.2	\$217.4	\$218.1	\$230.3	\$884.1	\$946.0	\$1,002.0	\$1,052.9	\$1,098.2
DIRECTV NRTC - Non-Pegasus	365.5	762.9	49.6	52.2	52.3	54.4	208.5	57.9	56.3	56.6	60.0	227.8	236.3	243.5	251.2	257.1
DIRECTV NRTC Subtotal	651.9	1,345.0	255.4	258.2	258.9	265.2	1,046.7	276.1	273.7	274.7	290.3	1,111.9	1,182.3	1,245.5	1,304.1	1,355.3
DIRECTV OAO	3,404.0	4,693.0	1,324.0	1,345.1	1,363.0	1,618.0	5,580.0	1,486.0	1,503.8	1,542.7	1,708.3	6,221.7	7,006.4	7,805.6	8,443.4	9,012.2
DIRECTV Total	4,055.9	5,488.0	1,579.4	1,594.3	1,621.9	1,773.2	6,626.7	1,762.1	1,767.5	1,821.4	1,998.6	7,333.6	8,188.7	8,951.1	9,648.5	10,367.5
EchoStar	1,803.7	2,718.2	861.6	886.3	1,022.5	1,150.4	4,001.1	1,104.3	1,157.9	1,231.1	1,387.6	4,861.1	5,762.5	6,643.7	7,488.6	8,262.0
<b>Total Revenue</b>	<b>\$5,859.6</b>	<b>\$8,206.2</b>	<b>\$2,441.0</b>	<b>\$2,480.6</b>	<b>\$2,644.4</b>	<b>\$2,923.6</b>	<b>\$10,647.8</b>	<b>\$2,866.4</b>	<b>\$2,925.4</b>	<b>\$3,052.5</b>	<b>\$3,386.2</b>	<b>\$12,194.7</b>	<b>\$13,951.2</b>	<b>\$15,594.7</b>	<b>\$17,137.1</b>	<b>\$18,629.5</b>
<b>Revenue Growth</b>																
DIRECTV NRTC - Pegasus	94.6%	103.3%	114.7%	53.3%	28.8%	14.2%	44.0%	0.0%	5.8%	5.8%	4.9%	3.9%	7.2%	5.8%	5.0%	4.3%
DIRECTV NRTC - Non-Pegasus	35.6%	-28.1%	-51.1%	-15.1%	7.5%	6.2%	-20.7%	-16.8%	7.8%	6.3%	6.9%	6.2%	3.3%	3.7%	3.0%	1.8%
DIRECTV NRTC Subtotal	56.6%	29.6%	29.4%	31.8%	24.4%	12.3%	23.8%	9.1%	6.0%	5.7%	6.2%	6.2%	6.4%	5.4%	4.6%	3.3%
DIRECTV OAO	112.1%	37.8%	25.0%	18.1%	18.1%	12.4%	18.3%	10.7%	11.8%	13.2%	12.6%	11.2%	14.1%	10.6%	8.2%	6.7%
DIRECTV Total	101.1%	58.8%	25.7%	20.8%	19.0%	12.4%	19.1%	10.3%	10.8%	12.5%	11.5%	11.2%	13.9%	9.4%	7.7%	6.4%
EchoStar	63.2%	69.3%	52.4%	49.5%	48.5%	42.6%	47.4%	28.1%	18.8%	20.4%	18.8%	21.5%	19.2%	14.7%	12.4%	10.7%
<b>Total Revenue Growth</b>	<b>58.6%</b>	<b>45.8%</b>	<b>34.0%</b>	<b>30.4%</b>	<b>28.4%</b>	<b>22.7%</b>	<b>28.4%</b>	<b>16.6%</b>	<b>14.3%</b>	<b>15.3%</b>	<b>14.4%</b>	<b>15.1%</b>	<b>15.4%</b>	<b>11.8%</b>	<b>9.7%</b>	<b>7.1%</b>
<b>Average Revenue per Subscriber</b>																
DIRECTV NRTC - Pegasus	\$43.94	\$44.80	\$46.48	\$47.80	\$46.76	\$46.86	\$47.86	\$61.86	\$61.50	\$61.07	\$63.00	\$61.80	\$63.08	\$64.27	\$65.32	\$65.25
DIRECTV NRTC - Non-Pegasus	\$2.52	\$2.72	\$2.90	\$2.90	\$2.90	\$2.90	\$2.90	\$2.52	\$2.52	\$2.52	\$2.52	\$2.52	\$2.52	\$2.52	\$2.52	\$2.52
DIRECTV NRTC Subtotal	\$24.70	\$24.46	\$24.86	\$24.86	\$24.86	\$24.86	\$24.86	\$24.70	\$24.70	\$24.70	\$24.70	\$24.70	\$24.70	\$24.70	\$24.70	\$24.70
DIRECTV OAO	\$8.08	\$8.32	\$8.50	\$8.50	\$8.50	\$8.50	\$8.50	\$8.08	\$8.08	\$8.08	\$8.08	\$8.08	\$8.08	\$8.08	\$8.08	\$8.08
DIRECTV Total	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72	\$47.72
EchoStar	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71	\$2.71
<b>Total Average Revenue per Sub</b>	<b>\$46.36</b>	<b>\$46.90</b>	<b>\$46.30</b>	<b>\$46.34</b>	<b>\$46.21</b>	<b>\$46.01</b>	<b>\$46.62</b>	<b>\$46.58</b>	<b>\$46.50</b>	<b>\$46.50</b>	<b>\$46.62</b>	<b>\$46.48</b>	<b>\$46.60</b>	<b>\$46.50</b>	<b>\$46.50</b>	<b>\$46.50</b>
<b>Pre-Marketing Cash Flow</b>																
DIRECTV NRTC - Pegasus	\$65.2	\$174.9	\$66.6	\$57.3	\$58.1	\$62.0	\$237.1	\$63.4	\$63.8	\$64.0	\$67.2	\$266.4	\$286.4	\$318.9	\$342.0	\$362.4
DIRECTV NRTC - Non-Pegasus	157.1	238.0	73.0	70.8	71.7	73.3	291.8	79.2	78.5	79.2	82.0	320.5	344.0	371.8	394.5	418.5
DIRECTV NRTC Subtotal	1,108.4	1,545.8	433.1	427.0	429.5	435.3	1,528.9	442.6	442.3	443.2	449.2	1,646.9	1,730.4	1,790.7	1,836.5	1,881.0
DIRECTV OAO	1,265.5	1,783.8	506.1	547.8	551.2	573.3	2,178.8	573.8	601.7	630.1	674.8	2,467.2	2,898.1	3,268.0	3,609.9	3,912.7
DIRECTV Total	4,821.1	6,103.8	1,445.2	1,524.6	1,530.7	1,608.6	5,707.7	1,416.4	1,444.0	1,473.3	1,524.0	4,114.1	4,628.5	5,058.7	5,436.0	5,793.7
EchoStar	1,175.6	\$2,657.7	\$848.5	\$922.2	\$886.1	\$878.5	\$3,700.5	\$1,009.1	\$1,007.4	\$1,114.0	\$1,211.8	\$4,368.3	\$5,316.8	\$6,166.7	\$7,012.9	\$7,828.3
<b>Total Pre-Marketing Cash Flow</b>	<b>\$1,755.6</b>	<b>\$2,657.7</b>	<b>\$848.5</b>	<b>\$922.2</b>	<b>\$886.1</b>	<b>\$878.5</b>	<b>\$3,700.5</b>	<b>\$1,009.1</b>	<b>\$1,007.4</b>	<b>\$1,114.0</b>	<b>\$1,211.8</b>	<b>\$4,368.3</b>	<b>\$5,316.8</b>	<b>\$6,166.7</b>	<b>\$7,012.9</b>	<b>\$7,828.3</b>
<b>Pre-Marketing Cash Flow Margin</b>																
DIRECTV NRTC - Pegasus	29.8%	30.0%	29.0%	27.8%	28.1%	28.3%	28.2%	29.0%	29.4%	29.3%	29.2%	29.2%	31.2%	31.8%	32.5%	33.0%
DIRECTV NRTC - Non-Pegasus	19.7%	24.0%	27.0%	28.8%	26.1%	28.3%	26.9%	27.0%	27.4%	27.3%	27.2%	27.2%	28.2%	28.8%	30.5%	31.6%
DIRECTV NRTC Subtotal	24.1%	28.2%	28.6%	27.4%	27.7%	28.7%	27.9%	28.0%	28.0%	28.8%	28.8%	28.8%	30.8%	31.4%	32.1%	32.6%
DIRECTV OAO	32.8%	32.0%	32.7%	35.5%	35.2%	32.7%	34.0%	32.8%	34.7%	35.1%	34.9%	34.9%	36.8%	37.2%	38.4%	40.8%
DIRECTV Total	31.7%	32.5%	32.3%	34.4%	34.5%	32.2%	33.3%	33.0%	34.1%	34.4%	34.0%	33.9%	36.3%	36.8%	37.8%	39.5%
EchoStar	30.7%	32.2%	28.7%	28.7%	28.6%	28.2%	28.2%	28.3%	28.4%	28.4%	28.3%	28.9%	28.9%	28.9%	28.9%	28.9%
<b>Total Pre-Marketing Cash Flow Margin</b>	<b>31.2%</b>	<b>32.4%</b>	<b>34.8%</b>	<b>36.1%</b>	<b>36.3%</b>	<b>33.4%</b>	<b>35.1%</b>	<b>35.5%</b>	<b>36.2%</b>	<b>36.7%</b>	<b>36.2%</b>	<b>36.1%</b>	<b>37.5%</b>	<b>38.5%</b>	<b>40.8%</b>	<b>42.2%</b>
<b>Expanded SAC / Gross Addition</b>																
DIRECTV NRTC - Pegasus	\$446	\$498	\$481	\$461	\$310	\$150	\$380	\$185	\$183	\$178	\$186	\$179	\$186	\$187	\$180	\$185
DIRECTV NRTC - Non-Pegasus	446	497	519	511	408	404	801	485	470	475	475	470	470	486	483	487
DIRECTV NRTC Subtotal	447	498	489	481	318	171	383	234	232	233	230	232	216	215	217	217
DIRECTV OAO	452	488	569	606	547	536	578	530	562	643	631	646	613	642	694	762
DIRECTV Total	451	489	548	643	520	486	947	503	538	905	880	908	474	413	580	772
EchoStar	387	453	437	387	384	362	395	436	436	428	431	434	410	404	388	388
<b>Expanded SAC / Gross Addition</b>	<b>\$425</b>	<b>\$474</b>	<b>\$486</b>	<b>\$523</b>	<b>\$467</b>	<b>\$437</b>	<b>\$479</b>	<b>\$476</b>	<b>\$482</b>	<b>\$480</b>	<b>\$484</b>	<b>\$475</b>	<b>\$445</b>	<b>\$409</b>	<b>\$388</b>	<b>\$377</b>
<b>Capitalized SAC / Gross Addition</b>																
DIRECTV NRTC - Pegasus	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
DIRECTV NRTC - Non-Pegasus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIRECTV NRTC Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIRECTV OAO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIRECTV Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EchoStar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Capitalized SAC / Gross Addition</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
<b>Total SAC / Gross Addition</b>	<b>\$446</b>	<b>\$498</b>	<b>\$481</b>	<b>\$461</b>	<b>\$310</b>	<b>\$150</b>	<b>\$380</b>	<b>\$185</b>	<b>\$183</b>	<b>\$178</b>	<b>\$186</b>	<b>\$179</b>	<b>\$186</b>	<b>\$187</b>	<b>\$180</b>	<b>\$185</b>
DIRECTV NRTC - Pegasus	\$446	\$498	\$481	\$461	\$310	\$150	\$380	\$185	\$183	\$178	\$186	\$179	\$186	\$187	\$180	\$185
DIRECTV NRTC - Non-Pegasus	446	497	519	511	408	404	801	485	470	475	475	470	470	486	483	487
DIRECTV NRTC Subtotal	447	498	489	481	318	171	383	234	232	233	230	232	216	215	217	217
DIRECTV OAO	452	488	569	606	547	536	578	530	562	643	631	646	613	642	694	762
DIRECTV Total	451	489	548	643	520	486	947	503	538	905	880	908	474	413	580	772
EchoStar	387	453	437	387	384	362	395	436	436	428	431	434	410	404	388	388
<b>Total SAC / Gross Addition</b>	<b>\$425</b>	<b>\$474</b>	<b>\$486</b>	<b>\$523</b>	<b>\$467</b>	<b>\$437</b>	<b>\$479</b>	<b>\$476</b>	<b>\$482</b>	<b>\$480</b>	<b>\$484</b>	<b>\$475</b>	<b>\$445</b>	<b>\$409</b>	<b>\$388</b>	<b>\$377</b>
<b>EBITDA</b>																
DIRECTV NRTC - Pegasus	(\$32.8)	\$4.9	\$5.6	\$12.8	\$26.2	\$47.6	\$82.0	\$48.3	\$48.7	\$47.8	\$51.4	\$197.2	\$241.4	\$263.5	\$284.2	\$309.3
DIRECTV NRTC - Non-Pegasus	(81.0)	(16.3)	(9.5)	(18.0)	9.8	11.7	(7.0)	9.9	7.4	8.8	3.8	38.9	30.0	34.3	39.2	44.8
DIRECTV NRTC Subtotal	(113.8)	(11.4)	(3.9)	(5.8)	36.0	59.3	75.0	58.2	56.2	56.6	55.2	236.1	271.4	297.8	323.4	354.1
DIRECTV OAO	151.0	153.0	50.0	79.0	20.0	63.0	208.0	85.0	122.8	139.2	180.1	527.2	1,089.4	1,618.0	2,041.6	2,541.7
DIRECTV Total	37.4	141.6	46.1	63.2	96.0	122.3	283.0	143.1	179.0	195.8	235.3	763.3	1,360.8	1,915.8	2,365.0	2,896.8
EchoStar	(172.0)	(167.2)	51.1	133.8	198.2	171.1	511.1	176.5	179.7	200.1	243.1	801.4	1,521.9	1,708.7	2,271.1	2,871.3
<b>Total EBITDA</b>	<b>(154.8)</b>	<b>(26.6)</b>	<b>\$97.2</b>	<b>\$207.3</b>	<b>\$211.2</b>	<b>\$293.4</b>	<b>\$804.1</b>	<b>\$322.6</b>	<b>\$358.6</b>	<b>\$395.9</b>	<b>\$478.4</b>	<b>\$1,564.7</b>	<b>\$2,882.3</b>	<b>\$3,624.5</b>	<b>\$4,436.1</b>	<b>\$5,768.1</b>
<b>EBITDA Margin</b>																
DIRECTV NRTC - Pegasus	-11.4%	0.8%	2.7%	6.1%	12.7%	21.7%	11.0%	22.6%	22.4%	21.9%	22.3%	22.3%	25.9%	26.3%	27.0%	28.1%
DIRECTV NRTC - Non-Pegasus	-22.2%	-4.2%	-18.2%	-36.4%	18.7%	21.8%	-3.4%	17.0%	13.2%	10.4%	6.8%	11.8%	12.7%	14.1%	15	



Figure 7 DBS Industry Valuation Comparison

	DIRECTV (GMH)			EchoStar (DISH)			Cable Composite (5)		
	2002E	2003E	2004E	2002E	2003E	2004E	2002E	2003E	2004E
Closing Price on: 5/7/02	\$14.35	\$14.35	\$14.35	\$25.50	\$25.50	\$25.50	-----	-----	-----
Fully Diluted Shares (1)	1,411.5	1,411.5	1,411.5	601.8	601.8	601.8	-----	-----	-----
Market Capitalization	\$20,255.4	\$20,255.4	\$20,255.4	\$15,345.0	\$15,345.0	\$15,345.0	-----	-----	-----
Plus: Long-Term Debt and Preferred	\$3,795.3	\$4,037.5	\$4,030.6	\$3,706.5	\$3,704.5	\$3,703.8	-----	-----	-----
Less: Cash and Cash Equivalents	(200.0)	(200.0)	(253.0)	(4,463.0)	(4,809.4)	(5,643.1)	-----	-----	-----
Less: Non-DBS Consolidated Debt, Net	(3,255.3)	(3,369.5)	(3,439.5)	0.0	0.0	0.0	-----	-----	-----
Less: Option/Warrant Proceeds (1)	(372.4)	(372.4)	(372.4)	(137.5)	(137.5)	(137.5)	-----	-----	-----
Less: Other Assets (at 90% of PMV)	(5,960.7)	(6,659.0)	(7,269.7)	(40.4)	(43.3)	(46.3)	-----	-----	-----
<b>DBS Enterprise Value</b>	<b>\$14,262.5</b>	<b>\$13,692.0</b>	<b>\$12,951.4</b>	<b>\$14,410.5</b>	<b>\$14,059.3</b>	<b>\$13,221.8</b>	-----	-----	-----
Year-End DBS Subscribers (2)	9,640	10,498	11,245	8,175	9,299	10,277	-----	-----	-----
<b>Enterprise Value Per Subscriber</b>	<b>\$1,480</b>	<b>\$1,304</b>	<b>\$1,152</b>	<b>\$1,763</b>	<b>\$1,512</b>	<b>\$1,287</b>	<b>\$3,110</b>	-----	-----
DBS Operating Cash Flow (EBITDA) (3)	\$527.2	\$1,089.4	\$1,618.0	\$801.4	\$1,321.9	\$1,769.7	-----	-----	-----
• EBITDA Margin	8.5%	15.4%	20.7%	16.5%	22.8%	26.6%	-----	-----	-----
<b>EBITDA Multiple</b>	<b>27.1X</b>	<b>12.8X</b>	<b>8.0X</b>	<b>18.0X</b>	<b>10.6X</b>	<b>7.5X</b>	<b>11.9X</b>	<b>10.8X</b>	<b>9.6X</b>
Total Company Free Cash Flow	(\$1,635.0)	(\$442.2)	\$53.0	\$64.1	\$346.4	\$834.4	-----	-----	-----
<b>Free Cash Flow Multiple</b>	-----	-----	-----	-----	<b>44.0X</b>	<b>18.4X</b>	-----	-----	-----
Earnings per Share	(\$0.31)	\$0.04	\$0.32	\$0.07	\$1.00	\$1.76	-----	-----	-----
<b>P/E Multiple</b>	-----	-----	<b>44.9X</b>	-----	<b>25.4X</b>	<b>14.5X</b>	-----	-----	-----
<b>Valuation Assumptions</b>									
Terminal Year	-----	2008	-----	-----	2008	-----	-----	-----	-----
Terminal Multiple	-----	11.0x	-----	-----	11.0x	-----	-----	-----	-----
Discount Rate	-----	10.0%	-----	-----	10.0%	-----	-----	-----	-----
Private Market Value Per Share	\$21.29	\$22.60	-----	\$46.90	\$51.16	-----	-----	-----	-----
Target Discount to PMV	0.0%	0.0%	-----	10.0%	10.0%	-----	-----	-----	-----
<b>Target Price Per Share (4)</b>	<b>\$30.81</b>	<b>\$33.61</b>	-----	<b>\$42.21</b>	<b>\$46.04</b>	-----	-----	-----	-----
• Implied Enterprise Value Per Subscriber	\$3,890	\$3,894	-----	\$2,993	\$2,841	-----	-----	-----	-----
• Implied EBITDA Multiple	71.1X	37.5X	-----	30.5X	20.0X	-----	-----	-----	-----
Closing Price on: 5/7/02	\$14.35	\$14.35	-----	\$25.50	\$25.50	-----	-----	-----	-----
Target Price vs. Current Price	114.7%	134.2%	-----	65.5%	80.6%	-----	-----	-----	-----

(1) Fully Diluted Shares and Option/Warrant Proceeds include only in-the-money options and warrants

(2) DIRECTV Subscribers exclude NRTC franchisee subscribers

(3) DIRECTV EBITDA for U.S. DIRECTV operations only

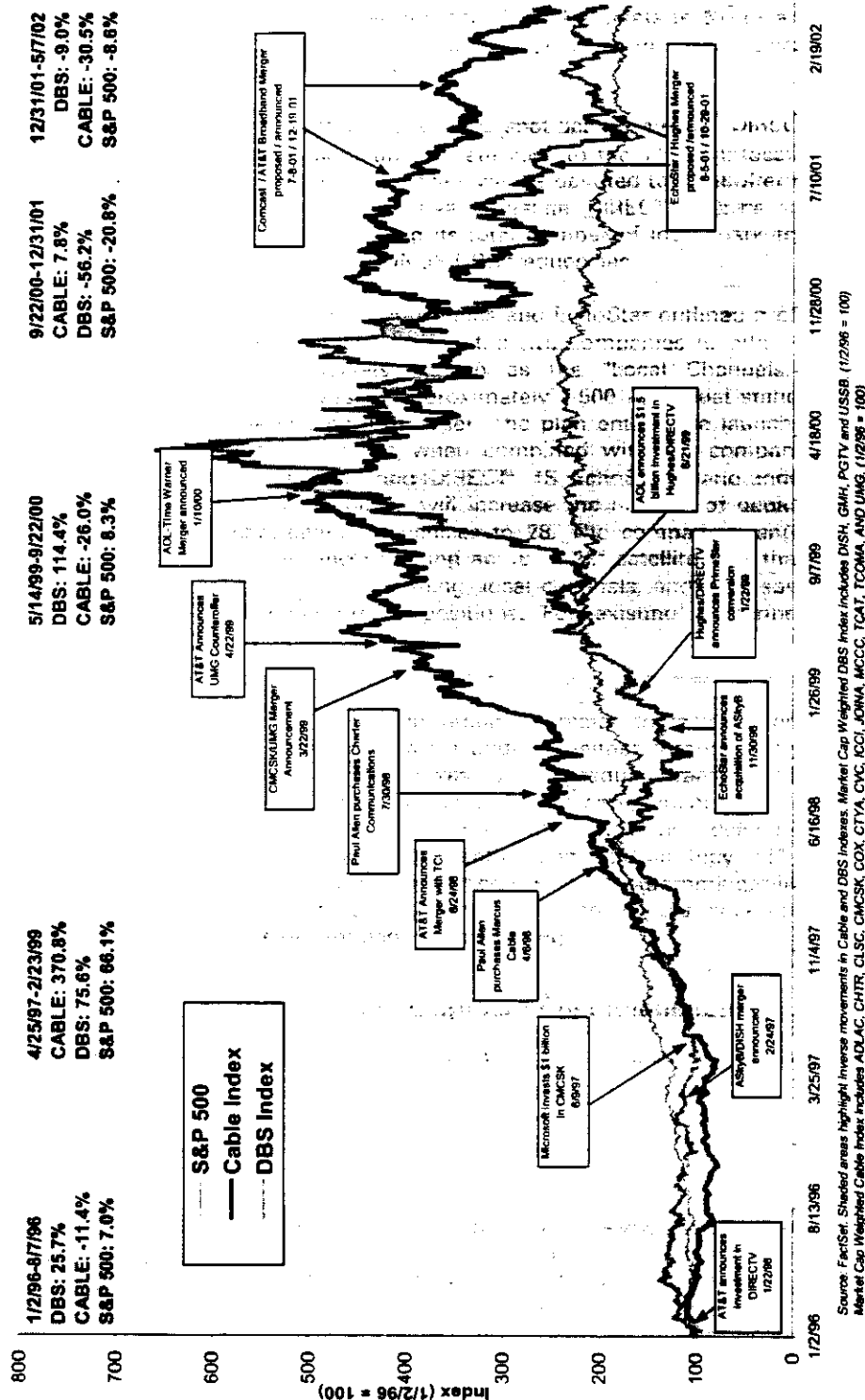
(4) GMH Target price based on 0.73 EchoStar exchange ratio

(5) Average Cable Enterprise Value Per Subscriber and Cable EBITDA multiples include COX, CHTR, CVC, ADLAE, MCCC and ICCI and are weighted by Cable Enterprise Value

Source: Deutsche Bank Securities Inc. estimates and company information



Figure 8 DBS Sector Stock Performance vs. Cable



## I. Customer Growth

While the dramatic uprising of cable over the last two years—resulting in 15 million digital cable subscribers with availability to 80% of the U.S. and 7 million cable modem subscribers with availability to 70% of the country—was expected to significantly narrow DBS's window of opportunity in urban/suburban markets, the level of DBS growth in these markets has not abated (as gross additions in the top 40-45 markets has generally grown faster than overall growth). As a result, we expect DBS industry net additions of 2.6 million in 2002, down only modestly from last year's 2.9 million net additions, to finish this year with nearly 20 million industry subscribers. In our view, this continued trend has been driven by a dramatic transformation of the DBS product offering vis-à-vis cable over the last two years in essentially three respects: local channel availability, multi-room equipment cost reduction and a more favorable monthly price-value comparison.

### Local Channels

#### Background

*The majority of recent DBS growth has been derived from the top 36-41 markets*

Since the DBS industry's introduction of local channels beginning in early 2000 into the top 36-41 markets of the country, which represent 60% of U.S. homes, the majority of DBS growth has been derived from these markets. This includes approximately 70% of DIRECTV's subscriber additions coming from 41 of the top DMA markets where it offers local and an estimated 60% of EchoStar's growth derived from 36 of the top markets where it makes local available.

Over the last five years, DIRECTV and EchoStar have accumulated all the high-power DBS frequencies licensed for full CONUS coverage of the United States through the acquisitions of PrimeStar and ASkyB, respectively. This includes a total of 96 frequencies (translating into approximately 1,000 digital video broadcast channels based on current average compression rates), spread evenly across three orbital locations—101° WL, 110° WL and 119° WL—of which 50 are owned by EchoStar and 46 by DIRECTV. With satellite launches by each company in September 1999, DIRECTV and EchoStar expanded their historical channel capacities of about 150-200 channels each to 500 channels each, enabling them to offer local signals in top markets and additional programming services.

**The number of channels offered is expected to be further increased under a successful EchoStar/Hughes merger scenario.** With the deployment of interoperable equipment, the two companies propose to significantly increase the number of programming channels offered, particularly local channels, through the elimination of more than 500 duplicative channels, as shown in Figure 9.

**Figure 9 DIRECTV / EchoStar Channel Duplication**

	<b>DIRECTV Channels</b>	<b>EchoStar Channels</b>	<b>Channels Duplicated</b>
Basic (1)	116	122	99
Premium	31	34	28
Local (2)	~450	~400	~300
Other:			
PPV	50	24	24
Sports (3)	23	23	22
A la carte (4)	49	64	30
<b>Total</b>	<b>~719</b>	<b>~667</b>	<b>~503</b>

(1) Total Choice for DIRECTV, America's Top 100 for EchoStar  
 (2) DIRECTV expects to also broadcast local channels to ten new markets in 2002 from the 119° WL orbital location  
 (3) Does not include professional and college sports packages  
 (4) Includes Spanish-language channels, Adult, Family Pack and additional content in America's Top 150

Source: Deutsche Bank Securities Inc. estimates and company information

***The majority of new DBS subscribers are increasingly former cable subscribers***

As mentioned above, local channels became available over satellite for the first time in early 2000, following passage of the Satellite Home Viewer Improvement Act (SHVIA) in 1999, which provided the industry with a compulsory license to offer local signals, and industry consolidation in 1999 in the form of EchoStar's acquisition of ASkyB and DIRECTV's acquisition of PrimeStar, which essentially doubled the capacity of both satellite providers to roughly 500 channels. This eliminated the need for consumers in the top 36-41 markets to either keep the basic broadcast tier of cable or obtain an over-the-air antenna in order to receive local signals with DBS service.

This availability of local channels in 2000 unleashed significant pent-up demand for DBS service in the urban/suburban markets that continues today as sales of local programming channels remains exceptionally strong and continues to be a major driver of subscriber additions in the urban/suburban markets. DIRECTV and EchoStar currently offer local programming in 41 markets and 36 markets, respectively, representing 60%-65% of total U.S. households. Figures 10 and 11 provide a full accounting of the top 100 DMA (Designated Market Area), including the competition from major cable operators. Given cable penetration in urban areas of 60%-70% and DBS penetration in these areas of 10%-15%, the majority of new DBS subscribers are increasingly former cable subscribers.

Figure 10: Top 50 Markets Competitive Analysis

DMA Rank	Markets	Total TV Households	Cum. % of U.S. Households		DIRECTV Channel Penetration		DBS Local Channel Penetration		Current Names of DBS Local Channel Presence (2)		DBS Local Channel Penetration		Cum. % of U.S. Households		DIRECTV Channel Penetration		DBS Local Channel Penetration		Current Names of DBS Local Channel Presence (2)		
			1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	
1	New York, NY	6,074,980	6.7%	6.7%	X	X	X	X	X	X	X	X	X	6.7%	6.7%	X	X	X	X	X	X
2	Los Angeles, CA	5,234,680	11.8%	11.8%	X	X	X	X	X	X	X	X	X	11.8%	11.8%	X	X	X	X	X	X
3	Chicago, IL	3,204,710	15.0%	15.0%	X	X	X	X	X	X	X	X	X	15.0%	15.0%	X	X	X	X	X	X
4	Philadelphia, PA	2,670,710	20.0%	20.0%	X	X	X	X	X	X	X	X	X	20.0%	20.0%	X	X	X	X	X	X
5	San Francisco-Oakland-San Jose, CA	2,420,120	22.1%	22.1%	X	X	X	X	X	X	X	X	X	22.1%	22.1%	X	X	X	X	X	X
6	Boston, MA	2,018,120	24.1%	24.1%	X	X	X	X	X	X	X	X	X	24.1%	24.1%	X	X	X	X	X	X
7	Dallas-Fort Worth, TX	1,885,500	26.1%	26.1%	X	X	X	X	X	X	X	X	X	26.1%	26.1%	X	X	X	X	X	X
8	San Antonio, TX	1,774,720	27.9%	27.9%	X	X	X	X	X	X	X	X	X	27.9%	27.9%	X	X	X	X	X	X
9	Denver, CO	1,712,080	29.8%	29.8%	X	X	X	X	X	X	X	X	X	29.8%	29.8%	X	X	X	X	X	X
10	Atlanta, GA	1,591,100	31.3%	31.3%	X	X	X	X	X	X	X	X	X	31.3%	31.3%	X	X	X	X	X	X
11	Seattle-Tacoma, WA	1,485,980	32.8%	32.8%	X	X	X	X	X	X	X	X	X	32.8%	32.8%	X	X	X	X	X	X
12	San Diego, CA	1,481,000	34.3%	34.3%	X	X	X	X	X	X	X	X	X	34.3%	34.3%	X	X	X	X	X	X
13	Phoenix, AZ	1,441,970	37.2%	37.2%	X	X	X	X	X	X	X	X	X	37.2%	37.2%	X	X	X	X	X	X
14	San Jose, CA	1,380,750	40.0%	40.0%	X	X	X	X	X	X	X	X	X	40.0%	40.0%	X	X	X	X	X	X
15	Cleveland, OH	1,378,200	41.2%	41.2%	X	X	X	X	X	X	X	X	X	41.2%	41.2%	X	X	X	X	X	X
16	San Antonio, TX	1,378,200	42.3%	42.3%	X	X	X	X	X	X	X	X	X	42.3%	42.3%	X	X	X	X	X	X
17	San Antonio, TX	1,378,200	43.5%	43.5%	X	X	X	X	X	X	X	X	X	43.5%	43.5%	X	X	X	X	X	X
18	San Antonio, TX	1,378,200	44.8%	44.8%	X	X	X	X	X	X	X	X	X	44.8%	44.8%	X	X	X	X	X	X
19	San Antonio, TX	1,378,200	45.8%	45.8%	X	X	X	X	X	X	X	X	X	45.8%	45.8%	X	X	X	X	X	X
20	San Antonio, TX	1,378,200	46.9%	46.9%	X	X	X	X	X	X	X	X	X	46.9%	46.9%	X	X	X	X	X	X
21	San Antonio, TX	1,378,200	47.8%	47.8%	X	X	X	X	X	X	X	X	X	47.8%	47.8%	X	X	X	X	X	X
22	San Antonio, TX	1,378,200	48.6%	48.6%	X	X	X	X	X	X	X	X	X	48.6%	48.6%	X	X	X	X	X	X
23	San Antonio, TX	1,378,200	49.4%	49.4%	X	X	X	X	X	X	X	X	X	49.4%	49.4%	X	X	X	X	X	X
24	San Antonio, TX	1,378,200	50.4%	50.4%	X	X	X	X	X	X	X	X	X	50.4%	50.4%	X	X	X	X	X	X
25	San Antonio, TX	1,378,200	51.1%	51.1%	X	X	X	X	X	X	X	X	X	51.1%	51.1%	X	X	X	X	X	X
26	San Antonio, TX	1,378,200	52.1%	52.1%	X	X	X	X	X	X	X	X	X	52.1%	52.1%	X	X	X	X	X	X
27	San Antonio, TX	1,378,200	52.9%	52.9%	X	X	X	X	X	X	X	X	X	52.9%	52.9%	X	X	X	X	X	X
28	San Antonio, TX	1,378,200	53.7%	53.7%	X	X	X	X	X	X	X	X	X	53.7%	53.7%	X	X	X	X	X	X
29	San Antonio, TX	1,378,200	54.5%	54.5%	X	X	X	X	X	X	X	X	X	54.5%	54.5%	X	X	X	X	X	X
30	San Antonio, TX	1,378,200	55.3%	55.3%	X	X	X	X	X	X	X	X	X	55.3%	55.3%	X	X	X	X	X	X
31	San Antonio, TX	1,378,200	56.1%	56.1%	X	X	X	X	X	X	X	X	X	56.1%	56.1%	X	X	X	X	X	X
32	San Antonio, TX	1,378,200	56.9%	56.9%	X	X	X	X	X	X	X	X	X	56.9%	56.9%	X	X	X	X	X	X
33	San Antonio, TX	1,378,200	57.8%	57.8%	X	X	X	X	X	X	X	X	X	57.8%	57.8%	X	X	X	X	X	X
34	San Antonio, TX	1,378,200	58.6%	58.6%	X	X	X	X	X	X	X	X	X	58.6%	58.6%	X	X	X	X	X	X
35	San Antonio, TX	1,378,200	59.4%	59.4%	X	X	X	X	X	X	X	X	X	59.4%	59.4%	X	X	X	X	X	X
36	San Antonio, TX	1,378,200	60.1%	60.1%	X	X	X	X	X	X	X	X	X	60.1%	60.1%	X	X	X	X	X	X
37	San Antonio, TX	1,378,200	60.7%	60.7%	X	X	X	X	X	X	X	X	X	60.7%	60.7%	X	X	X	X	X	X
38	San Antonio, TX	1,378,200	61.3%	61.3%	X	X	X	X	X	X	X	X	X	61.3%	61.3%	X	X	X	X	X	X
39	San Antonio, TX	1,378,200	61.9%	61.9%	X	X	X	X	X	X	X	X	X	61.9%	61.9%	X	X	X	X	X	X
40	San Antonio, TX	1,378,200	62.5%	62.5%	X	X	X	X	X	X	X	X	X	62.5%	62.5%	X	X	X	X	X	X
41	San Antonio, TX	1,378,200	63.1%	63.1%	X	X	X	X	X	X	X	X	X	63.1%	63.1%	X	X	X	X	X	X
42	San Antonio, TX	1,378,200	63.7%	63.7%	X	X	X	X	X	X	X	X	X	63.7%	63.7%	X	X	X	X	X	X
43	San Antonio, TX	1,378,200	64.3%	64.3%	X	X	X	X	X	X	X	X	X	64.3%	64.3%	X	X	X	X	X	X
44	San Antonio, TX	1,378,200	64.9%	64.9%	X	X	X	X	X	X	X	X	X	64.9%	64.9%	X	X	X	X	X	X
45	San Antonio, TX	1,378,200	65.5%	65.5%	X	X	X	X	X	X	X	X	X	65.5%	65.5%	X	X	X	X	X	X
46	San Antonio, TX	1,378,200	66.1%	66.1%	X	X	X	X	X	X	X	X	X	66.1%	66.1%	X	X	X	X	X	X
47	San Antonio, TX	1,378,200	66.7%	66.7%	X	X	X	X	X	X	X	X	X	66.7%	66.7%	X	X	X	X	X	X
48	San Antonio, TX	1,378,200	67.3%	67.3%	X	X	X	X	X	X	X	X	X	67.3%	67.3%	X	X	X	X	X	X
49	San Antonio, TX	1,378,200	67.9%	67.9%	X	X	X	X	X	X	X	X	X	67.9%	67.9%	X	X	X	X	X	X
50	San Antonio, TX	1,378,200	68.5%	68.5%	X	X	X	X	X	X	X	X	X	68.5%	68.5%	X	X	X	X	X	X



Source: Deutsche Bank Securities Inc. estimates and company information



## Must-Carry Rules

*Upon a successful consummation of a DIRECTV / EchoStar merger, the must-carry issue will become moot*

Under must-carry requirements of SHVIA, which became effective beginning on January 1, 2002, DBS providers were required to carry all local signals in a market where any local signals are offered. While the DBS industry had appealed the must-carry rules on multiple fronts, including the request of the FCC to reconsider its rules and by requesting federal courts of appeals to dismiss must-carry on constitutional grounds, they have all proved to be unsuccessful. EchoStar, however, has made one last effort, appealing to the Supreme Court, arguing that under first amendment rights that subscribers should be able to view whatever channels they want. Upon a successful consummation of a DIRECTV / EchoStar merger, however, the issue would become moot, as the two companies have announced that they would offer all local signals to all 210 local markets within two years of the merger close.

Given that the estimated 344 local channels available across the top 20 markets alone presented capacity issues, both DIRECTV and EchoStar have launched spot-beam satellites to make more efficient use of channel capacity through "frequency reuse", in order to comply with the must-carry requirements. With the successful launch of these satellites, DIRECTV and EchoStar are able to distribute all stations in the markets in which local is already offered.

EchoStar currently offers "must-carry" local service in all of its 36 markets, representing 56% of the U.S. population through satellites located at 110° WL, 119° WL, as well as "wing" satellites located at 61.5° WL and 148° WL. The company recently launched its first spot beam satellite, EchoStar 7, and that satellite is currently being tested before moving to its final position at the 119° WL location. In addition, EchoStar 8 is now under construction and is expected to be launched later this year into the 110° WL position. Using both of these spot beams satellites as well as existing satellites, EchoStar will be able to provide local signals in 50 DMAs using 10 of its 50 licensed full-CONUS DBS frequencies.

As EchoStar 7 was delayed due to technical issues discovered at the manufacturing facility, the company was forced to fulfill the compulsory obligations to offer all local channels in its local markets through its "wing" satellites. Customers wishing to receive all local signals need to get a second satellite dish, which EchoStar is providing free-of-charge, which can look at one of these satellites. The FCC staff recently issued an opinion that EchoStar was in violation of SHVIA in its implementation of must carry, but offered several possible remedies, most of which appear relatively benign. Regardless, the company's wing satellite solution is a temporary one, and is likely to be replaced with a single dish solution once EchoStar 7 is moved into place in early May.

DIRECTV currently offers "must-carry" local service in 41 markets, representing 62% of the U.S. population, through its recently launched DIRECTV 4S satellite located at 101° WL via six dedicated frequencies. DIRECTV 4S is a high-powered spot-beam satellite that added enough capacity to broadcast an additional 225 new local channels when the satellite became operational at the end of 2001. By the end of this year, the company

expects to allocate several additional frequencies at the 119° WL location, increasing the number of local markets to 51, or an increase of 10 markets (note that DIRECTV subscribers using the 119° WL satellite are required to use a larger, elliptical dish).

The company's second spot-beam satellite, DIRECTV 7S, is scheduled to launch sometime in late 2003 to the 119° WL location with the expectation that three frequencies will be devoted to local offerings. With the addition of the second spot beam satellite, DIRECTV will be able add an additional 29 markets, bringing its total number of local markets to 70, using 9 of its 46 licensed full CONUS DBS frequencies.

On February 25, Hughes and EchoStar outlined a plan under their proposed merger that will lead the two companies to offer local channels in all 210 DMA markets (known as the "Local Channels, All Americans" plan), encompassing approximately 1,500 individual stations within 24 months of the closing its merger. The plan entails the launching of a new spot-beam satellite, which when combined with the companies spot-beam satellites already launched (DIRECTV 4S, EchoStar 7) and under construction (DIRECTV 7S, EchoStar 8), will increase the number of dedicated local programming spot-beam frequencies to 28. The companies' engineers have designed a system incorporating an 18" x 22" satellite dish that will be able to receive regular programming, local channels, and high speed Internet access from multiple orbital positions. For existing subscribers that need the new equipment to receive local channels, the companies have indicated that it will be provided free of charge.

While this would require a major transition process given the different technical hardware standards—either through a forced conversion of one side's set-top boxes or a gradual transition by taking down niche programming on either side and forcing box replacements—it would ultimately realize the greatest utility of the 1,000-channel combined platform. The companies currently estimate that they will use additional channel capacity to offer additional HDTV programming, video on demand services, and other programming including pay-per-view, educational, specialty, and foreign language programming.

### **Multi-Room Equipment Cost Reductions**

***DIRECTV and EchoStar have substantially reduced the cost for new customers to wire multiple TV's within a home***

DBS equipment costs at retail were slashed several years ago and promoted with aggressive free equipment and installation offers. However, consumers were hit with a "sticker-shock" effect upon finding that the cost of second set receivers to wire additional TV's, along with installation costs for more than one set, resulted in over \$500 in upfront costs for the average household with 2-3 television sets. However, over the last year, DIRECTV and EchoStar have substantially reduced the cost for new customers to wire multiple TV's within a home, as DIRECTV now offers two boxes with installation for \$0-\$49 and EchoStar has successfully introduced an equipment rental for up to four boxes on one dish (both DIRECTV and EchoStar require 12 month commitments under their respective offers) along with a discounted two box purchase offer similar to DIRECTV's.



## Equipment Rental Plans

***The leasing program significantly reduces future acquisition costs since the equipment can be refurbished and redeployed***

EchoStar introduced a leasing program in 2000 which is now called the "Digital Home Plan," which entails a required one-year commitment to programming packages costing at least \$32 per month, a background credit check and a credit card, the combination of which effectively minimizes subscriber churn. The equipment is owned by EchoStar and is reclaimed in the case of a disconnected subscriber (or the subscriber's credit card will be charged the full price of the equipment), which significantly reduces future acquisition costs since the equipment can be refurbished and redeployed for less than \$100 to the next new subscriber.

This practice is imbedded in the cable model, which drives cable's historically lower upfront cost advantage versus DBS. Under the DBS lease program, the upfront costs are practically eliminated in return for a \$5 per set-top box lease fee every month. To date, EchoStar has experienced tremendous success, with 30%-40% of its activations signing up under the lease program, on average, and paying a lease fee of \$5 per month per receiver with much higher second set penetrations, resulting in a much higher return on investment than the consumer equipment purchase model. DIRECTV also offers a lease program, but only through its direct sales channel, which is not heavily promoted and accounts for only 1% of the company's gross additions.

The lease program necessitates a shift to capitalizing equipment costs, rather than expensing the subsidies, since ownership of the equipment resides with the company rather than the customer (which is a practice that is customary with cable). This significantly lowers expensed subscriber acquisition costs on the income statement, which when added to capitalized lease equipment, results in a gross subscriber acquisition figure. The one risk to the lease model is an eventually higher churn rate, following the one-year commitment, which is inherent in cable's higher basic churn of 2.5%-3% per month. However, as mentioned above, since the DBS companies continue to own the equipment, it can be redeployed at low cost. Illustrative of this is EchoStar, which in the first quarter of this year reported \$12 million of returned cash and hardware, which the company will use to offset future subscriber acquisition costs.

## Monthly Pricing

***DBS prices are more competitive than cable rates***

In the larger urban/suburban markets, basic cable rate increases that have followed plant upgrade completions have been as high as 8%-10% annually, while DBS prices have largely remained static. As shown in Figure 3, showing a cross-section of cable prices across the larger U.S. markets, basic cable prices, which include 60-70 analog cable channels, have risen to an average of \$40 per month. This is actually at the level of the most popular DBS packages of DIRECTV and EchoStar, which include closer to 160-170 channels of all-digital video service, 30-35 CD-quality audio channels and an interactive program guide. To equal DBS' product offering with the addition of digital cable, the additional \$10 digital access fee raises cable's pricing to \$50 versus \$40 for DBS.

To be more specific, DIRECTV's Total Choice package of 110 channels with local channels, which includes the best of cable for \$37.99 month is equal to

or below the price of expanded basic in many cable systems. EchoStar's America's Top 100 package with local channels is similar at \$37.98. These rates compare to the average basic analog cable rate of \$40 per month, which generally increases by \$7-\$10 per month for digital cable, and is roughly comparable to DBS in terms of channel availability (DIRECTV also has the only meaningful programming access advantage, with the exclusive rights to the NFL Season Ticket package through 2002).

While this raises the price of cable's digital product offering above that of DBS, digital cable does not require upfront equipment costs as DBS still generally does. However, a combination of lower equipment costs and promotional offers that trade-off low upfront fees for 12-month programming commitments has essentially reduced the consumer upfront fees to zero, including professional installation, for a single television set household and as low as \$0-\$50 for a two television set household. For those choosing a leasing program, which often attracts three and four television set households, equipment costs are \$5 per month per television set, which is slightly higher than cable equipment rental charges (which are not included in the aforementioned cable rates).

The combination of these changes in the DBS offering have significantly shifted the price-value comparison between cable and satellite across a majority of the country in DBS' favor, in our view. Specifically, for the average household with multiple TV's in an urban/suburban market, the addition of local channels and reduction in equipment prices have eliminated historical disadvantages of DBS versus cable, while the pricing model differences have provided a strong incentive for consumers to switch from cable to satellite.

### EchoStar Packages

Specifically, EchoStar's current programming packages are as follows with local channels an additional \$5.99 per month:

- 1) AT50 – \$22.99 for 77 video channels,
- 2) AT100 – \$31.99 for 106 video channels and 33 audio,
- 3) AT150 – \$40.99 for 137 video channels and 49 CD-quality audio channels,
- 4) America's Everything Pack – \$72.99 for AT150 plus four premium multiplex packages.

EchoStar typically has in effect a number of promotional offerings, the most recent of which include:

- 1) Free Dish – A free satellite system and free installation for subscribers committing to 12-months of service.
- 2) 1-2-3 Great TV – A free second receiver and three months of free programming (including local channels) and free installation for subscribers choosing to purchase a system for \$149 and committing to 12-months of service.

- 3) Digital Home Plan – A \$49.99 activation fee for up to four receivers, free delivery, free installation, and three months of free programming (including local channels). For an additional \$99, subscribers can choose to upgrade to a DishPVR system. Lease fees are \$5 per receiver. The Digital Home Plan is subject to a credit approval and a 12-month commitment. A cancellation fee of \$240 applies to those leaving before 12 months of service.

### DIRECTV Packages

DIRECTV recently overhauled its programming packages to more closely match cable and now offers three separate packages as follows:

- 1) Total Choice – 79 video channels and 31 CD-quality audio channels for \$31.99 per month without local channels and \$37.99 per month with local.
- 2) Total Choice Plus – 89 video channels and 36 audio channels for \$35.99 per month without local channels and \$39.99 with local.
- 3) Total Choice Premier – 144 video channels and 36 audio channels for \$81.99 per month without local channels and \$85.99 per month with local.

Equipment and installation fees for DIRECTV are generally \$49 for one system and \$99 for two systems. DIRECTV dealers have been buying these down by \$50 in both cases, so an all-in system can be had for essentially zero upfront costs, provided the customer makes a 12-month commitment.

### Other Competitive Advantages

#### Retail Distribution

***We expect the DBS industry to continue its lead in offering newer services***

DBS also holds an advantage in having retail distribution capabilities, allowing higher-end boxes, such as personal video recorders, to be largely financed by consumers, as discussed in detail below. To the extent that cable requires higher-end advanced digital set-top boxes, the incremental costs are absorbed by the cable operator under its current business model and recouped from the subscriber over time (which along with the lack of visible revenue streams, explains in our view the slow deployments by cable operators of advanced set-tops). Thus, with a more favorable fixed and variable capital cost equation and instant scalability advantage, we expect the DBS industry to continue its lead in offering newer services.

***EchoStar and DIRECTV will be introducing a standardized platform***

As part of its merger, EchoStar and DIRECTV will be introducing a standardized platform, which when complete will allow the two companies to fully capitalize on the consolidation of their combined spectrum. EchoStar has also developed a single receiver, code named DYDRA that can be configured to receive either EchoStar or DIRECTV programming. This set-top box which should be commercially available soon, is designed to provide a low cost set-top box that can be deployed prior to a merger with Hughes Electronics. Once the two companies obtain regulatory approval and decide on the standard platform, it will not be necessary to replace the DYDRA boxes already in the

field. The companies estimate that the all-in costs of replacing equipment in the field will be \$1.5-\$2.0 billion, which includes the cost of the set-top, the antenna (satellite dish) and the truck roll.

### Niche Targeting

***Satellite has better addressed niche audiences***

To date, satellite has better addressed niche audiences, through a combination of foreign language programming and cutting edge technology including personal video recording functionality and HDTV (both described in more detail below). Both DBS providers offer an array of foreign language programming, particularly an extensive array of Spanish language channels, which generally cannot be found on cable and cater towards one of the highest growth segments of the U.S. population.

***Satellite companies enjoys a substantial time-to-market advantage given their ability to roll out new products nationwide upon introduction***

In addition, both companies offer integrated personal video recording enabled set-top boxes. With satellite's substantial time-to-market advantage given the inherent ubiquity of its network, new products are rolled out nationwide upon introduction, unlike cable, which must first upgrade plant neighborhood by neighborhood over an extended period of time. This also suggests a significant upfront cost element to cable's deployment of new services, as cable operators are required to invest in server equipment in every headend. With 10,000-11,000 cable headends across the country, this implies a higher capital risk and longer deployment schedule than DBS, whose centralized architecture essentially requires only one server to serve the entire country. While cable's plant rebuilds will be largely completed in urban/suburban areas within the next 12 months, the launch of new TV services will be gradual and it remains unlikely that the remaining 30% of U.S. homes that are in rural areas will ever receive advanced new services.

### Long-Term Subscriber Projections

Looking ahead, as displayed in Figure 2, we expect DBS subscriber net additions to continue to gradually decline, as a result of moderating increases in gross additions due to increasing competition from cable, combined with the effect of a growing number of disconnects from the effect of an enlarging subscriber base even with static churn. Nevertheless, the industry's subscriber base should continue to grow at an average 5% annual rate over the next six years. This growth should be accommodated by a continued modest expansion of the overall multichannel market (including cable and satellite), which among 107 million television households in the country was 85% penetrated at the end of 2001, as shown in Figure 12.

Based on our assumption that TV household growth will continue at about 1% annually and that multichannel penetration remains in the 85%-90% range through 2008, we believe there are over 100 million customers who will likely take a subscription television service. Additionally, we view the 3-4 million households that subscribe to an alternative provider other than DBS or cable as a significant potential market, which would include the 800,000 large dish, or C-band, customers that have already begun to convert; approximately 1.4 million SMATV (satellite master antenna television) customers in apartment buildings who are also being cannibalized; and 1.5 million wireless cable and other subscribers.

***We estimate a potential market of at least 10 million households available to be gained by DBS and cable operators***

Thus, we estimate a potential market of at least 10 million households available to be gained by DBS and cable operators. Based on the DBS industry's ability to sign up an effective 100% of net new multichannel subscribers last year, as modest cable subscriber gains are offset by cannibalization of other areas, we believe the continuation of that trend seems reasonable, which would support our projection of the DBS industry expanding from 18 million currently to nearly 30 million. In addition, we note that these penetrations include dual-subscriptions of DBS subscribers taking cable (which is estimated at 2-3 million) to receive local stations, and the denominator does not account for all of DBS's potential reach, such as commercial establishments, RVs, colleges, nursing homes, hospitals and businesses.

Figure 1 illustrates the dramatic shift in the composition of DBS growth toward the urban/suburban markets following the launch of local signals in early 2000. Meanwhile, growth in the rural areas has begun to stall at overall DBS penetration in these areas of 25%, likely due to the unavailability of local channels. EchoStar has targeted the potential to expand DBS penetration in rural areas through the merger with Hughes by exploiting increased channel capacity to offer local channels in all markets. This is particularly the case given that the low density characteristics of cable systems in these areas make the economic prospects for justifying cable rebuilds required to offer advanced digital video and high speed data services untenable, leaving these systems particularly vulnerable to DBS competition if local channels become available.

In alternatively segmenting the market, by the end of this year, as shown in Figure 4, we estimate there will be approximately 20 million DBS subscribers and 20 million digital cable subscribers, or 40 million digital pay TV subscribers, out of a universe of 90 million multichannel subscribers (which includes 69 million basic cable subscribers and 20 million DBS subscribers). With only 107 million TV households in the country, implying multichannel penetration of 85%-90% currently, we believe growth for cable and DBS will likely be centered on the remaining 50 million basic analog cable subscribers that don't take digital cable or DBS. To these remaining 50 million subscribers, we believe DBS offers a more compelling proposition to switch, as it has significantly more channels/better quality at the same price, while digital cable upgrades require an additional \$10 per month fee for the same increased value. This dynamic is corroborated by several recent studies that have measured consumer perception of value in the DBS product as significantly superior to analog and digital cable.

**Figure 12 U.S. Multichannel Television Subscribers**

Homes and Subscribers in Thousands

	1998A	1999A	2000A	2001A	2002E	2003E	2004E	2005E	2006E	2007E	2008E
<b>U.S. Households</b>	102,448	103,736	104,966	106,225	107,500	108,790	110,095	111,416	112,753	114,107	115,476
• % Change Year-to-Year	1.0%	1.3%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
<b>U.S. TV Households</b>	99,600	100,802	102,200	105,500	106,766	108,047	109,344	110,656	111,984	113,328	114,687
• % Change Year-to-Year	1.8%	1.2%	1.4%	3.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
• % of U.S. Households	97.2%	97.2%	97.4%	99.3%	99.3%	99.3%	99.3%	99.3%	99.3%	99.3%	99.3%
<b>Homes Passed by Cable</b>	96,000	101,400	103,200	104,748	106,214	107,595	108,994	110,411	111,846	113,300	114,773
• % Change Year-to-Year	1.5%	5.6%	1.8%	1.5%	1.4%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
• % of U.S. Households	93.7%	97.7%	98.3%	98.6%	98.8%	98.9%	99.0%	99.1%	99.2%	99.3%	99.4%
<b>Cable Subscribers</b>	66,100	67,300	68,500	68,843	69,049	69,165	69,180	69,058	68,797	68,400	67,869
• % Change Year-to-Year	2.0%	1.8%	1.8%	0.5%	0.3%	0.2%	0.0%	-0.2%	-0.4%	-0.6%	-0.8%
• % of Homes Passed by Cable	68.9%	66.4%	66.4%	65.7%	65.0%	64.3%	63.5%	62.5%	61.5%	60.4%	59.1%
Net Additions	1,300	1,200	1,200	342	207	115	16	(123)	(260)	(397)	(532)
<b>DBS Subscribers</b>	8,694	11,446	14,781	17,170	19,645	21,688	23,467	25,015	26,366	27,528	28,517
• % Change Year-to-Year	38.3%	31.7%	29.1%	18.2%	14.4%	10.4%	8.2%	6.6%	5.4%	4.4%	3.8%
• % of U.S. TV Households	8.7%	11.4%	14.5%	16.3%	18.4%	20.1%	21.5%	22.6%	23.5%	24.3%	24.9%
DBS Subscriber Net Additions	2,407	2,752	3,335	2,913	2,597	2,043	1,776	1,549	1,351	1,160	991
<b>Multichannel Subscribers</b>											
Cable	66,100	67,300	68,500	68,843	69,049	69,165	69,180	69,058	68,797	68,400	67,869
DBS	8,694	11,446	14,781	17,170	19,645	21,688	23,467	25,015	26,366	27,528	28,517
C-Band	1,921	1,648	1,196	842	500	350	250	150	75	50	30
SMATV	1,000	1,450	1,500	1,500	1,425	1,354	1,286	1,222	1,161	1,103	1,048
MMDS	950	800	700	700	600	500	350	200	150	125	100
Overbuilders/Other	200	400	550	750	900	1,050	1,200	1,300	1,375	1,450	1,500
<b>Total Multichannel Subscribers</b>	<b>78,865</b>	<b>83,044</b>	<b>87,227</b>	<b>89,805</b>	<b>92,118</b>	<b>94,106</b>	<b>95,733</b>	<b>96,948</b>	<b>97,924</b>	<b>98,654</b>	<b>99,083</b>
• % Change Year-to-Year	4.5%	5.3%	5.0%	3.0%	2.6%	2.2%	1.7%	1.3%	1.0%	0.7%	0.4%
• % of U.S. TV Households	79.2%	82.4%	85.3%	85.1%	86.3%	87.1%	87.8%	87.8%	87.4%	87.1%	86.4%
Total Multichannel Net Additions	3,414	4,179	4,183	2,578	2,314	1,987	1,627	1,212	979	730	409
<b>Market Share of Total Multichannel Subscribers</b>											
Cable	83.8%	81.0%	78.5%	76.7%	75.0%	73.5%	72.3%	71.2%	70.3%	69.3%	68.5%
DBS	11.0%	13.8%	16.9%	19.1%	21.3%	23.0%	24.5%	25.8%	26.9%	27.9%	28.8%
C-Band	2.4%	2.0%	1.4%	0.9%	0.5%	0.4%	0.3%	0.2%	0.1%	0.1%	0.0%
SMATV	1.3%	1.7%	1.7%	1.7%	1.5%	1.4%	1.3%	1.3%	1.2%	1.1%	1.1%
MMDS	1.2%	1.0%	0.8%	0.8%	0.7%	0.5%	0.4%	0.2%	0.2%	0.1%	0.1%
Other	0.3%	0.5%	0.6%	0.8%	1.0%	1.1%	1.3%	1.3%	1.4%	1.5%	1.5%

Source: Deutsche Bank Securities Inc. estimates and company information



## II. Convergence

In addition to appealing more broadly to the mass market in urban/suburban parts of the country, DBS has capitalized on the early adopter demand for two potentially explosive new product categories—HDTV (high definition television) and PVRs (personal video recorders, à la TiVo). This reflects the DBS industry's typical lead-to-market advantage over cable (which occurred with interactive TV services, for instance) by virtue of having both ubiquitous national coverage (implying the existence of one headend to upgrade for DBS versus 10,000 cable system headends across the country) and a massive retail distribution infrastructure to leverage.

### HDTV

#### Background

**The introduction of High Definition Television (HDTV) has generally suffered from the chicken and egg problem of content and cost.** With HDTV-capable televisions still in excess of \$3,000-\$6,000, including a decoder, the cost of a set is still out of the reach of the mass market. Hence, only about one million sets were sold in all of 2001. Content is also still limited, as television stations have been dragging their feet in transmitting their high definition programming due to high upfront equipment costs. It is estimated that only about 256 stations are now operating in digital format, with HDTV available in one form or another in markets covering 76% of all households. As costs continue to decline, television set sales should continue to increase and the Consumer Electronics Association (CEA) estimates that two million sets will be sold in 2002.

While still small in numbers, DBS has piggy-backed on these retail sales by leveraging its technical advantage over cable of having an all-digital architecture, which yields a superior picture quality to digital cable, that appears to be highlighted on HDTV's. Recall that digital cable is actually a hybrid analog-digital product, with the core 60-80 basic cable channels still broadcast in analog form and the additional 100-150 new channels broadcast in digital format, albeit at a high compression ratio (partially so as to not highlight a superior picture quality compared to the analog channels). Also benefiting the sale of DBS with high definition TV's is the obvious incentive of retailers that are commissioned to push satellite sales and the early availability of additional high definition digital content from DBS, as discussed below.

**For DBS and cable, the prospect of offering HDTV to subscribers is somewhat daunting, given the amount of bandwidth needed.** Digital compression has allowed DBS operators to pack 8-10 digitally compressed channels on one 24 MHz transponder, but with high definition channels, only two channels can fit on the same transponder. Cable is similarly challenged, with generally two channels taking up 6 MHz of bandwidth, equivalent to 10-12 digitally compressed channels. Due to the significant bandwidth needed, cable operators are likely to need at least 750 MHz plant (using today's compression standards) in order to offer HDTV along with its other services.

While DBS is capacity-constrained in its ability to eventually carry all local programming in high definition, the inevitable widespread availability of HDTV local signals via over-the-air transmission obviates the needs to replicate the carriage over satellite. Based on the FCC's mandate for the conversion from analog to digital to be completed by 2006, at which point analog spectrum of the broadcasters is to be reclaimed (provided that 85% of households have digital TV's), it will likely entail a requirement for over-the-air reception to be nearly ubiquitous (since the 10%-15% of U.S. households that receive over-the-air signals today instead of cable or DBS are not likely to be forced to take cable in order to get local channels). Note also that over-the-air digital signal reception has an all-or-nothing feature, as opposed to the potential "snowy" picture typically associated with receiving over-the-air reception via antenna today. Thus, we do not see any disadvantage to satellite longer term of being capacity-constrained to offer local high definition signals directly over satellite, with the ability to efficiently integrate DBS service with over-the-air HDTV local signals.

In fact, DBS has been able to exploit its normal first-to-market advantage over cable with HDTV by offering several national networks that have been produced in high definition, such as HBO and Showtime. Both premium movie channels, as well as limited pay-per-view offerings, are offered by each of the DBS providers in high definition, with DIRECTV also offering HDNet (a variety channel formed by Mark Cuban) and EchoStar offering the CBS network feed. Consumers are required to purchase an integrated DBS receiver/HD decoder, which retails for approximately \$500-\$700 that can be used with any HDTV. This incremental cost is also required for advanced digital cable set-tops with high def capability, as Motorola and Scientific-Atlanta have begun shipping integrated boxes for approximately \$500 (with some operators like Charter and Comcast passing along these costs for an additional fee of \$10 per month), although availability today is limited to a very small percentage of the country.

### FCC Mandate

In order to kick start the industry, FCC Chairman Powell has set forth some voluntary milestones that he expressed a desire to see programmers, cable, DBS, equipment manufacturers and retailers adhere to.

- By the 2002-2003 television season, the top four broadcast networks (ABC, CBS, Fox, and NBC) as well as HBO and Showtime, provide high-definition or "value-added DTV programming" during at least 50% of the prime-time schedule. By the beginning of 2003, affiliates of the top four broadcasters will obtain and install the equipment necessary to pass through the network signals
- By January 1, 2003, cable systems upgraded to at least 750MHz will provide at no cost to subscribers up to five programming channels of HD that provide at least 50% of the prime-time schedule. Cable subscribers should have the option of leasing or purchasing a single set-top box that can display high definition programming.
- By January 1, 2003, DBS operators carry up to five programming channels of HD that provide at least 50% of the prime-time schedule.

- Equipment manufacturers commit to meeting demand for cable set-top boxes that accommodate high definition programming, and that all television sets greater than 36" have DTV tuners in 50% of units by January 1, 2005, sets 25"-35" have DTV tuners in 50% of units by 2005, and all sets larger than 13" have DTV tuners by 2006.

EchoStar currently broadcasts Showtime, HBO, CBS (with both East and West coast feeds), pay-per-view, and a demo channel in high definition. The company's Model 6000 set-top box offers consumers the ability to watch high definition television programming if they have purchased a HDTV-capable television set. In addition to EchoStar-delivered HDTV programming, the Model 6000 provides a seamless interface to include locally transmitted over-the-air HDTV channels. The units sells for \$499 stand-alone with the 8VSB tuner for an additional \$149. For a complete system, the price is \$699. DIRECTV currently broadcasts HBO, HDNet, Showtime, and a pay-per-view channel in high definition. Subscribers are required to have purchased a DIRECTV-enabled HD receiver and a triple-LNB, 18"x24" DIRECTV Multi-Satellite dish antenna. EchoStar and Hughes have indicated that post-merger, the combined company would carry at least 12 HDTV channels.

**On the cable front, the introduction of HDTV has been mixed, with a few operators leading the pack.** Charter announced that it is launching HDTV in five markets, with 249,000 current digital subscribers, in the second quarter of this year including Alhambra/Pasadena and Glendale/Burbank, CA, University Park, TX, South Miami, FL, and Birmingham, AL. The company anticipates two additional markets, Kalamazoo, MI, and St. Louis, MO, to be added in the third quarter. In addition to major broadcast television networks, premium programming from HBO and Showtime will be available in HDTV format. The company plans on accommodating the 1080i format with a 16:9 aspect ratio. Subscribers will need a separate set-top box to access the programming. Pricing has not been determined yet.

Comcast began offering HDTV in Pennsylvania, New Jersey and Delaware to 1.3 million subscribers starting last fall and plans to introduce service in Northern Virginia this summer and in Maryland, Detroit, Indianapolis later this year. Washington, D.C. is expected to be added next year after a system upgrade. Programming includes local broadcast channels as well as HBO and Showtime. Starting next year, Comcast expects to offer High Definition programming on its SportsNet channel, and plans to broadcast more than 200 basketball, baseball, and hockey games in HDTV. In Philadelphia, subscribers are currently paying an incremental \$10.95 per month to receive high definition ABC, CBS, NBC, HBO and Showtime, which does not include the rental of a separate Motorola side-car set-top box (or it can be purchased for \$300).

## **Personal Video Recorders (PVR)**

### **Background**

While video on demand (VOD) has been viewed as a significant competitive advantage for cable over DBS (as DBS is inherently disadvantaged with a one-way network and tight bandwidth constraints for interactive services), the

early results on VOD have been lackluster. Meanwhile, the competitive response from the DBS industry of using PVR hard drives in the set-top is potentially proving to elicit much greater consumer interest, which leverages significant competitive advantages of satellite over cable. In addition to allowing VCR functionality (pause, fast forward, rewind) of live television and advanced digital recording, PVR's will also soon allow the satellite provider to download a select number of hit titles to be cached on the hard drive. With a hard drive currently able to store up to 80 hours of video, which should rise to over 100 hours in the near future given the apparent Moore's Law curve on storage cost trends, a PVR-enabled DBS receiver can easily store the top 20-30 movies and allow access on a VOD-like basis.

**The DBS industry is aggressively moving ahead with integrating personal video recorders in receivers, such as TiVo with DIRECTV.** EchoStar was the first to offer a receiver with integrated PVR functionality with its DISHPlayer product three years ago and expanded that functionality with the DishPVR 501 receiver last year, which offers 35 hours of recording time. The company's newly updated personal video recorder, known as the DishPVR 508, takes the 501 model one step further through the addition of an 80 gigabyte hard disk drive (versus 40 gigabytes in the DishPVR 501) that allows up to 80 hours of recording time, of which EchoStar has reserved 20 hours for caching interactive content, music, software, and advertisements.

*EchoStar has already reached 500,000 subscribers with PVR-enabled set-tops*

With these product offerings, EchoStar has already reached 500,000 subscribers with PVR-enabled set-tops and is targeting to reach one million by the end of the year. Driving this, EchoStar plans to even more aggressively deploy the service in 2002, with the offering of a PVR-enabled DBS set-top for a mere \$100 all-in price (compared to free standard equipment currently with a 12-month commitment) and no required monthly fee. This compares to a stand-alone TiVo device that retails for \$399 for the equipment and \$12.95 per month for the service. While appearing to reflect a substantial subsidization of the hard drive cost, EchoStar's planned \$100 pricing actually reflects only a modest increase in subscriber acquisition cost as the company has been able to engineer the hard drive costs down to \$100 to integrate into its receivers. This is based on an inherent ability to eliminate duplicative memory and processing power costs between the stand-alone PVR (as in a separate TiVo device) and take advantage of its all-digital architecture.

### Competitive Advantage Versus Cable

The latter aspect mentioned above, in particular, highlights a significant advantage of DBS over cable in the integration of PVR technology into set-tops. This reflects the fact that digital cable set-tops are actually hybrid analog-digital boxes that require an inherently higher cost to implement hard drives due to the need to include an additional analog-to-digital converter in the set-top, at an additional estimated \$50-\$100 cost currently. (This is on top of the already higher cost of digital cable set-tops at an average of \$250 compared to DBS receivers at slightly over \$100.) In the case of satellite receivers, which are all-digital, the hard drive records the digital bit stream directly from the satellite, eliminating the need for an extra converter. These factors also provide for much higher quality recording and video output on the television for satellite, or result in the alternative trade-off of requiring

***DBS has been able to leverage retail distribution to gain a several year head start***

significantly greater storage in the hard drive for a cable set-top (or stand-alone PVR) in order to compensate for lesser recording quality.

As in the case of HDTV sales, DBS has been able to leverage its significant national retail distribution infrastructure to take a several year head start over cable's deployment of PVR technology. Exacerbating this delay on the cable industry side has been the sluggish pace of innovation from the industry's two main set-top suppliers—Motorola and Scientific-Atlanta—which have stymied open standards from developing that would drive down set-top box costs (which are approximately twice the level of satellite), open up retail distribution and stimulate technology improvements. All of these dynamics have occurred in a dramatic way on the cable modem side—DOCSIS standardization has caused prices to drop from over \$200 to under \$100 in the last two years, widespread retail availability, and several advancements in capability. Thus, as several operators have defensively begun ordering PVR-integrated digital set-tops, the cost of these boxes in the \$500-\$650 range and lack of retail distribution have resulted in a \$10 monthly fee, which further extends the pricing gap between DBS and digital cable, outlined above.

Cable's VOD vendors, such as SeaChange and Concurrent, have proposed network-based PVR, using existing VOD servers. While technically a viable solution, we believe the simultaneous usage rates under network-based PVR would make the service economically unviable, given the experience of existing PVR users (that have been reported to watch recorded, rather than live TV, over 90% of the time). Additionally, unless the service were to become a significant loss leader, the cable industry would be competitively disadvantaged by having to charge a monthly rental fee, while the DBS industry led by EchoStar is offering the service at no monthly charge.

Ultimately, the cable companies expect to have hard drives built directly in the set-top boxes in order to lower the overall cost of equipment, similar to what DBS has been offering for several years. Motorola plans on introducing the DCT 2600 in the second half of this year which includes a disk drive, and a disk drive will be a standard feature in its 5200 series of set-top boxes. Charter is jointly developing a Broadband Media Center 8000 (BMC8000) sidecar and the BMC9000 set-top box with Digeo Inc. and Motorola, which will include an personal video recording options as well as a cable modem, wireless networking capability, telephony support, e-mail, music and photo storage. Field testing for the BMC8000 is expected in the summertime with commercial deployment in the fall. Scientific-Atlanta will include a two-tuner PVR with an 80 gigabyte hard drive in its 8000 series of set-tops, which are expected to be shipping this month. Time Warner has ordered 100,000 units, and Cox will begin trials soon. Pioneer's next generation set-top box, the Voyager 4000, will offer a two-tuner PVR and hard drive.

## **PVR Content**

Under EchoStar's recent programming agreement with Vivendi, the company is expected to combine interactive software from Canal+ Technologies with a hard drive in EchoStar set-tops and access to Vivendi's content to provide content on-demand. While not required, the agreement carries incentives for Universal to provide theatrical and musical content on an expanded pay-per-

view basis and on an on-demand basis. Specifically, there are incentives for Universal to allow all current films, including library titles and events, and Universal music content to be stored on a hard drive in an EchoStar set-top and viewed by the subscriber on an on-demand basis. In addition, the agreement allows Universal to provide earlier windows for new movies for pay-per-view and VOD in exchange for improved economics. Offering such services will allow EchoStar to remain competitive vis-à-vis cable as the latter aggressively deploys video on demand (VOD) this year and, later, other interactive services, while giving EchoStar greater negotiating leverage with other content suppliers to obtain on-demand content.

## Video on Demand

*Cable operators are taking a much more aggressive approach to the rollout of VOD*

Cable is preparing a response to DBS subscriber inroads with an aggressive launch of true video on demand (VOD) which reached 10 million homes at the end of 2001, and is expected to reach 30% of U.S. homes (although available only to those with digital set-tops) by the end of this year. Cable operators are taking a much more aggressive approach to the rollout of VOD partially owing to the inherent competitive advantage over the satellite industry, which is technologically unable to offer the product. In addition, cable can deploy VOD service in a sweeping fashion through software downloads to essentially all digital boxes in homes, offering the capability as a standard feature of the digital product offering. Tempering this advantage has been disappointing early results by cable in video on demand with movie buy-rates in the one per month or less range.

Though DBS is technologically unable to offer true video on demand, which delivers dedicated video streams from a central server containing a potentially unlimited library of content to a digital set-top, the DBS industry can use PVR hard drives in the set-top receiver to download a select number of hit titles which can be cached on the hard drive. With a hard drive currently able to store up to 80 hours, a PVR-enabled DBS receiver could easily store the top 20-30 movies and allow access on a VOD-like basis.

EchoStar's video on demand plans are currently in the development stage and are expected to be ready for consumer launch in 2003. VOD is expected to take advantage of the installed base of hard-drive equipped DishPVR 501 and DishPVR 508 set-top boxes to cache popular movies that can then be viewed for a fee. The company envisions charging one fee for limited use (24 or 48 hours) and a higher fee for unlimited use. The company is also working on music on demand, as mentioned above, in conjunction with Vivendi which will allow users to download music for a fee, with the ability to record to music onto a writeable compact disc for an additional fee.

## Interactive TV

While not considered the revenue driver once envisioned, the DBS industry still anticipates enhancing its overall revenue through interactivity, via a combination of customer support functionality which ultimately leads to lower churn, incremental fee generating applications such as video on demand, and incremental revenue generating opportunities such as interactive advertising.

***DBS moved quickly into the interactive TV front in 2000***

DBS moved quickly into the interactive TV front in 2000, leveraging its ubiquitous coverage into a time-to-market advantage that was already evident in Europe, where satellite operators in the United Kingdom, France and Spain had already deployed very rich interactive TV applications nationwide. Thus, partnerships were formed between EchoStar and Microsoft's WebTV (which has since dissolved) and between DIRECTV and AOL TV, both to provide full Internet access to the television by integrating modems into DBS receivers and using the telephone line bi-directionally, while also delivering Webcasting services over satellite for limited interactive services. While sales of these products have been limited, DBS is able to capture this niche market, given cable's current indifference to providing Internet access to the TV.

***DIRECTV and EchoStar also partnered with Wink and OpenTV***

DIRECTV and EchoStar also partnered with Wink and OpenTV, respectively, to incorporate basic interactive features in the majority of new set-top boxes, which are enhancing existing programming with text of additional information (e.g., more news on CNN, biographies on actors, sports scores), enabling interactive ads/e-commerce (to get more product information or coupons and make purchases) and broadcasting multiple full-screen virtual channels for weather, sports, news, banking and e-commerce.

While DBS technology is limited in its ability to offer the same type of bandwidth on demand capability as cable (for server-based content on demand, for instance) due to its capacity limitations, it is ideally suited for push-technology types of applications, such as Webcasting (i.e., top 100 websites downloaded continuously to the set-top) and other enhanced television applications that can be downloaded and stored on digital set-top boxes, thus minimizing the demands on satellite capacity.

By the end of this year, EchoStar expects to have at least six million interactive capable set-top boxes installed in consumer's homes, up from approximately five million today. Powered by OpenTV middleware, these boxes currently offer customer support applications including the ability to upgrade programming packages (a call is still required to downgrade), view statements, pay the bill with a credit card, and access a list of frequently asked questions. Interactive applications currently deployed and/or under development include local weather, news and sports, horoscopes, Zap2it which provides local information, fantasy baseball and football, and lottery results.

***EchoStar and Vivendi have agreed to "experiment" in the development of new interactive channels***

As part of their last broader agreement, EchoStar and Vivendi agreed to "experiment" in the development of new interactive broadband channels (using bandwidth equivalent to eight broadcast channels) to be launched on EchoStar within three years of the contract. These interactive channels are expected to leverage Vivendi Universal's experience in Europe with technology from Canal+ Technologies and will feature interactive games, sports, education, movies and music. These interactive channels are also expected to leverage the hard drives in EchoStar's high-end set-top receivers, to provide content-on-demand and, thus, better compete with cable. Illustrating the potential demand for such services, the MediaHighway software deployed by Canal+, and to be used by EchoStar, currently conducts over one million transactions per month in France alone.

## Broadband

### Background

***Broadband remains the satellite industry's main Achilles' heel vis-à-vis cable***

Broadband remains the satellite industry's main Achilles' heel vis-à-vis cable, although the industry is making strides towards addressing its disadvantage in this area. Satellite transmission of two-way data has long been cost disadvantaged in two critical respects—space segment costs have made the cost per bit, or ultimately per subscriber, prohibitively expensive, while the ground segment costs to add a transmitter for return path capability to a traditional one-way receiver has pushed equipment costs into the \$600-\$800 neighborhood. EchoStar and Hughes have been offering two-way high speed Internet access over satellite for a number of years through DIRECWAY and StarBand, respectively, which have garnered an unimpressive 110,000 subscribers and 40,000 subscribers, respectively.

The product is packaged in the form of an integrated dish (which is elliptical at 21-24 inches across) through which the consumer can receive digital video to the TV and high speed data to the PC with download speeds at about 400 kbps and upstream throughput of 128 kbps. The product is deployed through the use of current generation Ku-band satellites, with upfront equipment pricing at \$600-\$800 and monthly pricing in the \$60-\$70 range, reinforcing the aforementioned major cost disadvantages. These factors have relegated marketing efforts toward rural areas, where competition from DSL and cable modems is largely non-existent.

As shown at the bottom of Figure 3 previously, DIRECWAY service offered through DIRECTV currently costs \$579.98 for hardware an installation (which includes a \$320 instant rebate) and ongoing monthly costs of \$59.99. As of now, the company does not offer a bundled product. Due to FCC regulations, two-way satellite broadband services must be professionally installed.

***Satellite Cost Disadvantage***

The fixed cost economics for a broadband Ku-band satellite are difficult to justify at best. As the uplink and downlink frequencies must be shared across the entire U.S. if a full-CONUS satellite is used, and a specific portion of the uplink and downlink frequency can only be used by one person at a time, there is a finite limit to the number of subscribers that can simultaneously use a particular transponder. Each 36 MHz transponder can provide a forward path for approximately 10,000 subscribers assuming normal Internet usage patterns. However, for every three forward path transponders, one reverse path transponder is needed. Therefore, assuming a 24-transponder satellite, only 18 can be used for the forward path, resulting in a full capacity of 180,000 subscribers per satellite. Assuming that a traditional Ku-band satellite as described costs at least \$150 million, including launch and insurance, the fixed costs works out to \$833 per subscriber. Therefore, Ku-band satellites have been viewed as interim technology until the evolution of Ka-band frequencies with next-generation satellites.

Due to the prohibitive cost factor resulting in unfavorable economic returns, most satellite delivered consumer Internet plans have been pushed back or many cases shelved, highlighted by EchoStar's recent decision to discontinue

selling the StarBand product and write-down of an investment in WildBlue Communications, which was planning to launch a Ka-band service this year.

#### ***Ka-band Holds Promise***

Next generation Ka-band technology holds promise, as it can be optimized for broadband data services, unlike existing Ku-band satellites, through the use of spot beams, which can offer frequency re-use, and promises two-way interactive capability, with bigger payload satellites, and increased capacity to allow faster speeds and a reduction in effective costs per bit, and per subscriber (based on an estimated 8-10 times increased efficiency of satellite capacity). Both DIRECTV and EchoStar have obtained Ka-band frequencies at neighboring locations to their primary slots, setting up the eventual possibility of integrating bandwidth on demand applications like VOD, interactive games, etc., with the traditional television services on one dish.

Hughes has led the most aggressive Ka-band effort and views the \$2 billion satellite platform SPACEWAY, which is still unproven ahead of its 2003 commercial launch, as its best hope for developing an economically competitive alternative to residential cable modem service over the next several years. SPACEWAY is licensed to operate at two full-CONUS orbital slots at 99° WL and 101° WL. The first satellite, incorporating on-board processing and switching, is being constructed to use 500 MHz of spectrum in the 19.7-20.2 GHz range for downlink and 500 MHz of spectrum in the 29.5-30.0 GHz range for uplink. Hughes anticipates \$1.8 billion in total capital expenditures for both satellites, of which it has already invested about \$1.0 billion. SPACEWAY was originally developed towards the enterprise market, but plans now call for residential service as well.

#### ***DSL Solution***

In the more urban areas, where satellite technology is likely to remain disadvantaged, DBS and DSL (digital subscriber line) technologies appear to be logical complements against their common competitor in cable. The limited bandwidth and distance restrictions inherent in DSL's twisted pair copper architecture cannot currently provide video service cost effectively, while DBS, with its broadcast architecture, is extremely cost effective at broadcasting video, but relatively inefficient at providing point-to-point communications, like internet access.

The bundled DBS-DSL product would be on par with cable's digital video-cable modem bundle from a consumer standpoint, although it does not realize the benefits of leveraging the same network as cable does. Recognizing these synergies, DIRECTV purchased Telocity last year, a national DSL operator, allowing DIRECTV to offer both video and a competitive high speed data solution to the entire country, although the economics of DSL resale appear tenuous currently.

More promising, however, are potential arrangements between the DBS providers and the incumbent RBOCs. While these types of relationships have generally been unsuccessful in the past, as in the case of DIRECTV's deals years ago in which Bell Atlantic and SBC agreed to resell DIRECTV service, we believe these alliances offer the potential to narrow DBS' only major disadvantage vis-à-vis cable. This stems from the increasing necessity by the RBOCs to find a video alternative, in light of cable's gradual encroachment with cable telephony, which has been demonstrated by Cox and AT&T

Broadband to lead to a 30% share of the local telephone market for cable within a few years of launch through discounting.

***EchoStar recently  
signed agreements with  
SBC and Earthlink***

Recognizing these logical synergies, EchoStar recently signed agreements with SBC and Earthlink, which entail offering consumers a bundled package of DBS and DSL with a \$10 discount off the combined price. The bundled DBS-DSL product pricing will essentially blunt cable's digital video-cable modem bundle from a consumer standpoint, which also reflects a \$10 discount (as purchasing cable modem without basic cable typically entails a \$10 higher price point). Under the SBC joint marketing agreement announced on April 17 of this year, EchoStar and SBC will bundle EchoStar's video offering with SBC's high speed Internet DSL offering. Subscribers taking at least the AT100 programming package from EchoStar and SBC DSL will receive a \$10 discount on the bundle, implemented as a \$5 discount on each of the two company's respective bills. Under the terms of the deal, each company is incentivized to cross-sell the other's product. Exact terms of the deal have not yet been disclosed. Logistically, a subscriber that signs up for the other's service will be "hot transferred" to the other company's rep. Under the agreement, each provider provisions its own service, i.e. EchoStar does its own install and SBC ships the modem to the customer for self-install.

***Other DSL Advantages***

From DBS' perspective, the RBOC relationships also offer a path to eventually offer voice telephony, either through direct bundling agreements with the RBOCs or through emerging voice over DSL technology. Further, DSL appears to be a longer-term viable solution to providing a high speed, real-time return capability to the DBS video product offering. As an example, EchoStar's latest top-of-the-line receiver, the DISH Network PRO 701, is equipped with a built-in DSL modem, allowing for broadband Internet access on the television and more advanced interactive features. Over time, the integrated DSL modem could allow the possibility of offering true server-based video on demand as compression techniques advance to enable TV-quality video over the 500 kbps guaranteed speed capability of most DSL technologies. As a result, we view the SBC bundling arrangements by EchoStar as the first of a gradual set of partnerships to be formed with all the RBOCs in order to create a national alliance versus cable.

### III. Cash Flow Profitability

*The basic economic model for DBS remains compelling, and is actually improving*

As shown in our industry revenue and cash flow projections in Figure 6, while having initially been deferred for several years due to stronger-than-anticipated subscriber growth, EchoStar generated positive operating cash flow (EBITDA) on a consistent basis in 2001, following DIRECTV which initially turned EBITDA positive in 1999. With expensed subscriber acquisition costs ranging from \$500 to \$550, average revenues per subscriber of \$50-\$60 per month, pre-marketing cash flow margins of 30%-40% and churn at 17%-20% annually, the basic economic model for DBS remains compelling, and in fact has improved since reaching a low point in early 2001.

*We estimate the DBS industry will generate almost \$1 billion in free cash flow in 2002*

The future profitability of the business is particularly attractive given the scalable nature of the DBS infrastructure, which is entirely a fixed, upfront cost investment that will require minimal additional capital expenditures until replacement satellites are required in the 2007-2010 time frame (other than the launch of newer spot-beam satellites to address local channel must-carry). As shown in the bottom of Figure 6, we estimate the industry will generate almost \$1 billion in free cash flow in 2002, up from \$110 million in 2001. This should then roughly double in 2003 and ultimately increase to over \$4 billion by 2008. The emergence of free cash flow also sets the stage for tremendous return on invested capital characteristics, the ultimate determination of value creation for shareholders.

Driving free cash flow are the industry's attractive operating metrics. As shown in the top portion of Figure 6, we expect average revenue per subscriber (ARPU) for the industry to show modest increases going forward due to increased penetration of local programming, equipment leasing revenue, continued modest rate increases, the introduction of new revenue streams from interactive services, and advertising. With respect to rates, the industry has taken very modest rate increases compared to cable's average 6%-8% price increases, resulting in a significant pricing umbrella between the two, as discussed above, which would allow DBS providers significant opportunity going forward. Taking all these factors into account, we are conservatively projecting 3%-5% average monthly revenue per subscriber increases for DIRECTV and EchoStar going forward.

An important indicator of underlying margins is **pre-marketing cash flow (PMCF)**, which is defined as DBS revenue less programming and operating expenses, before direct subscriber acquisition costs. Programming expenses for DBS, at approximately 40%-45% of revenue, are the largest component of expenses and are significantly higher than cable, which typically run at 20%-25% of revenue. The wide gross margin disparity with cable reflects somewhat higher programming rates for DBS, but also the impact of having significantly more channels and a higher mix of low-margin pay movie revenue (as the studios take 50%-60% of pay-per-view and premium revenue).

On the higher programming rates, which stemmed from the industry's lack of leverage with programmers upon inception, we believe programming contract renewals over the next several years should provide opportunities for both DIRECTV and EchoStar to take advantage of increased scale in order

to drive programming prices lower. We would expect other pre-marketing expenses, particularly customer service, satellite tracking and telemetry as well as general and administrative, to show scale economies over time, driving pre-marketing cash flow margins from 35%-40% currently to the 40%-45% level by the end of our forecast period.

Marketing and selling expenses, referred to as **subscriber acquisition costs (SAC)**, provide the greatest operating leverage opportunity in the DBS business. These costs generally include equipment and installation subsidies, retailer commissions and advertising spending implemented to drive subscriber growth. The direct relationship between subscriber additions and acquisition costs sets up a trade-off between growth and profitability, the net effect of which has been to defer operating cash flow (EBITDA) for the industry since inception.

*Upfront equipment costs to consumers have fallen dramatically since the DBS industry's launch*

Upfront equipment costs to consumers have fallen dramatically since the DBS industry's launch, from as high as \$500-\$700 five years ago for a professionally installed, fully loaded system, to as low as \$0-\$50 now with free installation and equipment offers. It is important to note that as important as subsidies in driving lower price points has been the reduction in manufactured costs of equipment from \$500 several years ago to \$100-\$150 currently.

Longer term, we project DBS profit margins on an EBITDA basis will eventually reach 30%-35%, compared to the 40%-45% levels common in cable. The two main reasons are the industry's lower gross margins because of higher programming costs described above and higher ongoing costs to maintain its subscriber base due to higher subscriber acquisition expenses.

*Churn appears to be trending down*

The important balancing factor in the equation of increasing subscriber acquisition costs to drive subscriber growth, while preserving value, is **churn**. DIRECTV and EchoStar's monthly churn rates had historically remained at the low levels of 1.0%-1.3%, but last year rose to 1.7%-1.8%, coinciding with the sharp reduction in upfront investments required by subscribers. Both EchoStar and DIRECTV, however, have become adept in designing their new subscriber packages such that they are attracting higher quality subscribers, primarily through the requirement of 12-month commitments secured through credit card, which in the long run significantly reduces churn and improves ARPU. Hence, churn figures appear to have reached a high point in the middle of last year, and are now trending down.

## IV. Consolidation

The prospects for consolidation under the proposed merger of EchoStar and Hughes Electronics/DIRECTV would substantially leverage the aforementioned subscriber growth and profitability dynamics.

***Tremendous merger synergy potential***

Underlying the merger is tremendous synergy potential in creating a single DBS platform that would represent the largest multichannel operator in the country with almost 18 million subscribers, from combining DIRECTV's 10.5 million subscribers with EchoStar's 7.2 million. The synergies to be realized are generally in terms of revenue enhancements, channel capacity utilization, and cost structure—valued by EchoStar at up to \$56 billion on a net present value basis based on an expected \$5.0 billion in incremental operating cash flow (EBITDA) by 2005.

Specifically, EchoStar has identified \$36 billion in net present value of cost savings from reductions in programming costs, subscriber acquisition costs, subscriber churn and general and administrative expenses. On the revenue side, the remaining \$20 billion in net present value synergies is expected to come mainly from expanding the number of markets where local-to-local via satellite is available to all 210 markets, as well as driving increased revenue from delivering internet access into rural parts of the country, higher advertising and interactive services, and increased programming through additional channel capacity (including HDTV, pay-per-view and specialized channels).

***EchoStar estimates that the transaction would result in an incremental 9.4 million DBS subscribers by 2005***

Furthermore, the company estimates that the transaction would result in an incremental 9.4 million DBS subscribers by 2005 through a combination of lower churn, higher penetrations in new local-to-local markets (DISH has experienced a 10% increase in penetration in areas where it has introduced local-to-local signals), and a more compelling value proposition to the consumer via a widespread rollout of PVR and other interactive functionality, as well as broadband access. Figure 1 illustrates this potential market expansion.

While the merger would require a major transition process given the different technical hardware standards—either through a forced conversion of one side's set-top boxes or a gradual transition by taking down niche programming on either side and forcing box replacements—it would ultimately realize the greatest utility of the 1,000-channel combined platform.

***We believe that the most obvious area of cost savings are in equipment subsidies and dealer commissions***

We believe that the most obvious area of cost savings are in equipment subsidies and dealer commissions, which have dramatically escalated over the last five years in response to intensifying intra-industry competitive dynamics, highlighted by the exclusive arrangements formed by DIRECTV with RadioShack, Circuit City and Best Buy. These cost reforms should allow the industry to accelerate the transition from subscriber growth to cash flow generation, thereby addressing ultimate profitability concerns in the market. Alternatively, or in addition, subscriber acquisition cost savings could be repurposed to drive enhancements in the DBS product offering. Specifically, the DBS industry could leverage its inherent advantage currently in the

integration of hard drive/PVR (personal video recording) technology into set-tops as more of a standard function.

## Regulatory Status

The two companies are currently awaiting regulatory approval from both the FCC and the Department of Justice (DOJ) as well as a favorable tax ruling from the IRS. EchoStar has indicated that it believes the FCC will return with a ruling sometime in September, with the DOJ at the same time, or slightly before this. Upon approval, closing could occur in about one month's time.

***Management remains confident on the regulatory prospects of the proposed merger***

EchoStar and Hughes management remain confident on the regulatory prospects of their proposed merger, having presented their case to Capitol Hill with no new legislation being introduced that would jeopardize the merger. EchoStar's dialogue with the Department of Justice (DOJ) continues, with the DOJ expected to issue a final merger ruling no sooner than September. If the DOJ were to decide that the relevant market includes only satellite, rather than the entire pay TV industry including cable, then EchoStar management has indicated that it sees little chance of the merger being approved. However, EchoStar points to significant precedent that exists for the DOJ to a rule that the broader pay television market is the relevant market given the 1998 case of EchoStar's acquisition of the ASkyB assets from News Corp/MCI. In addition, management is optimistic given that since that time, cable and satellite have become increasingly competitive and interchangeable with the launch of digital by cable and local by satellite.

EchoStar believes that antitrust issues will be largely focused on the concern of collusion in urban/suburban markets where competition will be reduced from three players (EchoStar, DIRECTV, and cable) down to two, rather than in non-cabled rural markets where competition is being reduced from two to one. This is based on the fact that cable already has a monopoly in 17-20 million homes located in multiple dwelling units (apartment complexes, etc.) and that the creation of a monopoly in 5-7 million rural homes that do not have access to cable would be offset by the promise of a national pricing model. Further, management contends that its commitment to a national pricing policy would preclude any ability to collude with a fragmented cable industry. EchoStar also argues that in markets which do not currently offer local service, competition would essentially be enhanced from one to two players as the merger would free up satellite capacity to offer local signals in those markets and create for the first time a viable satellite offering. Reinforcing this benefit, on February 25, Hughes and EchoStar outlined a plan under their proposed merger that will lead the two companies to offer local channels in all 210 DMA markets (known as the "Local Channels, All Americans" plan), encompassing approximately 1,500 individual stations within 24 months of the closing its merger.

In terms of willingness to make further concessions EchoStar and Hughes management have stated that a forced divestiture of one of the three primary DBS orbital slots held by DIRECTV and EchoStar would result in a substantial reduction of merger synergies, which would lead both parties to call off the merger (Hughes management has publicly stated the same). If the merger was not consummated, under the merger agreement, EchoStar would acquire



Hughes' 81% interest in PanAmSat (SPOT) for \$2.7 billion (121 million shares at \$21.47) and pay a break-up fee of \$600 million in cash to Hughes. EchoStar management has indicated strategic interest in PanAmSat, highlighting its status as the second largest satellite services provider in the world with 21 satellites providing global coverage, as well as potential merger synergies with EchoStar in the form of cross-selling opportunities and margin upside.

US  
Satellite Communications

May 8, 2002

# EchoStar Communications

Solid 1Q02 Masked by Lower EBITDA

Rating Remains

**Strong Buy**

Price 5/7/02

**US\$25.50**

Target Price

**US\$50.00**

Ticker/Code

**NASDAQ: DISH**

FY (Dec.)	1Q	2Q	3Q	4Q	EPS
2001A	(\$0.35)	\$0.00	\$0.01	(\$0.09)	(\$0.45)
2002E	(\$0.20)A	\$0.05	\$0.08	\$0.14	\$0.07
2003E	—	—	—	—	\$1.00

Source: Deutsche Bank Securities Inc. estimates and company information

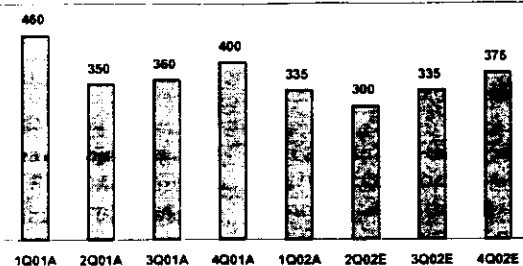
52-Week Range:	<b>\$39-\$19</b>	5-Year EBITDA Growth Rate	<b>31%</b>
Shares Outstanding: (MM)	<b>601.8</b>	Adj. Ent. Value/'03 EBITDA	<b>10.6x</b>
Market Cap: (MM)	<b>\$15,297</b>	Avg. Daily Volume: (MM)	<b>4.2</b>
S&P 500:	<b>1049.49</b>	Float: (MM)	<b>142.1</b>

EchoStar reported solid first quarter results on May 2, which were masked by lower-than-expected EBITDA and a downward revision in our full year 2002 EBITDA estimate from \$976 million to \$800 million.

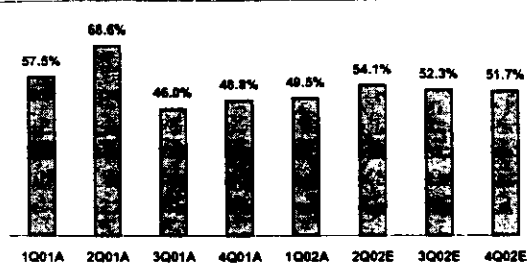
- **1Q02 Subscribers:** EchoStar added 335,000 net new subs in the quarter, in line with our estimate of 325,000. Churn was managed down to 1.35%, versus 1.38% last year, and our estimate of 1.55%.
- **1Q02 EBITDA:** EchoStar reported EBITDA of \$178.5 million, below our estimate of \$227.5 million, reflecting a shift from capitalized SAC to expensed SAC, in addition to slightly higher subsidies, driven by the nature of current promotions.
- **2002/2003 Estimates:** We are maintaining our previous subscriber net addition and churn forecasts, in addition to revenue and pre-marketing cash flow margins. However, as a result of EchoStar's plans to continue its current promotional offers that subsidize the consumer purchase of multiple sets in lieu of leasing equipment, we have reduced our 2002 EBITDA forecast from \$976 million to \$800 million, while trimming our 2003 EBITDA projection from \$1.44 billion to \$1.32 billion. However, we note that this primarily reflects a shift from capitalizing SAC costs to expensing, as well as a shift to higher quality subscriber adds with a higher mix of multiple sets.
- **Valuation/Investment Outlook:** These solid results highlight, in our view, the continued strong subscriber growth momentum of the DBS industry. Despite the higher-than-projected SAC expected for the year, we believe the incremental costs are tied to an improving sub base profile, as the industry continues to acquire above-average quality cable subs. These factors are likely to lead to further improvements in ARPU, churn and SAC over time, fueling the industry's improving profitability characteristics, which are highlighted by the emergence of FCF and earnings during 2002. These factors also highlight the stock's attractive valuation of 10.6 times 2003 EBITDA, relative to prospects for 30% five-year EBITDA compound annual growth. As a result, we reiterate our Strong Buy rating and target price of \$50 per share.

**Figure 13 EchoStar—Quarterly DBS Metrics**

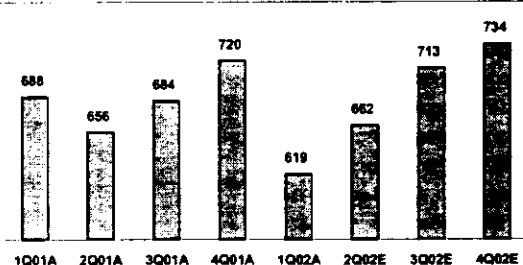
Net Additions (000)



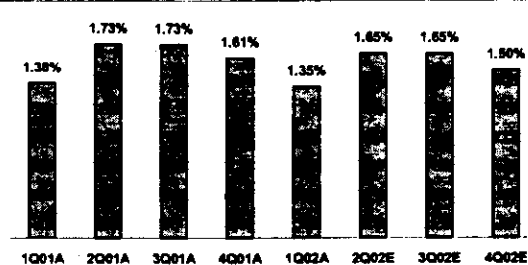
Monthly Net Additions



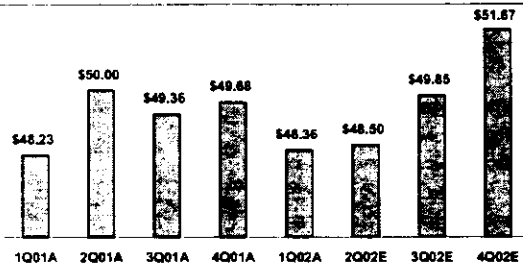
Gross Additions (000)



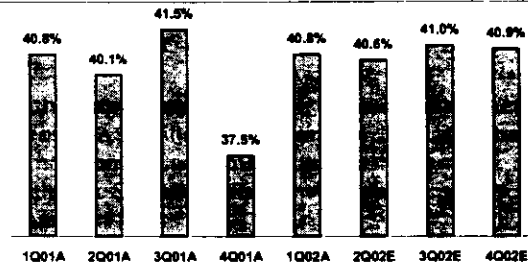
Monthly Churn



Average Revenue per Subscriber

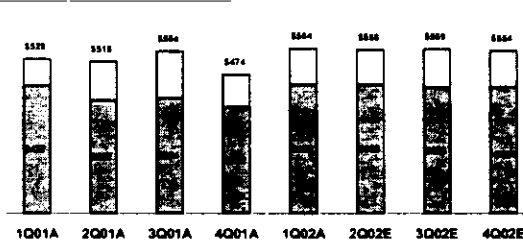


Pre-Marketing Cash Flow Margin

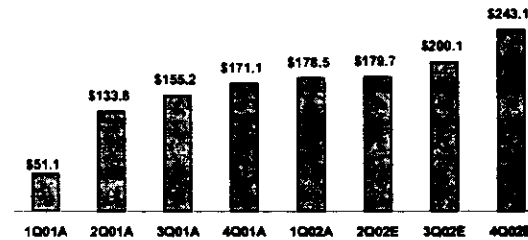


Subscriber Acquisition Costs (SAC) - Gross Addition

Expensed SAC Capitalized SAC



Operating Cash Flow (BTDAs) (millions)



Source: Deutsche Bank Securities Inc. estimates and company information

## Viewpoint

EchoStar reported solid first quarter results on May 2, which were masked by lower-than-expected EBITDA and a downward revision in our full year 2002 EBITDA estimate from \$976 million to \$800 million.

**Subscriber Growth:** EchoStar added 335,000 net new subscribers in the first quarter, versus our estimate of 325,000 subscribers and overall Street estimates in the 280,000-350,000 range, to finish the quarter at 7.165 million subscribers, up from 6.83 million at the end of the fourth quarter of last year. With DIRECTV having already reported strong net additions of 342,000 in the first quarter, EchoStar attained essentially 50% incremental market share. Subscriber churn declined sequentially in the first quarter to 1.35% per month, versus 1.62% in the fourth quarter of last year, and essentially flat compared to 1.38% in the prior year. Churn was significantly better than our 1.55% estimate, as an increasing percentage of customers over the last 12 months have subscribed under 12-month programming commitments.

**Revenue/Pre-Marketing Cash Flow:** Total DISH Network revenue for the first quarter increased 27.9% to \$1,018.9 million, in line with our estimate of \$1,049.7 million. Revenue was driven by the substantially expanded subscriber base mentioned above and a slight increase in average revenue per subscriber (ARPU) to \$48.36 per month, up from \$48.23 per month in the prior year first quarter. Pre-marketing cash flow, measured as operating cash flow (EBITDA) before subscriber acquisition costs, increased 28.1% to \$450.1 million, versus our estimate of \$456.6 million, as the company continued to manage expenses exceptionally well.

**SAC/EBITDA:** Subscriber acquisition costs (SAC) expensed on the income statement totaled \$271.6 million versus our estimate of \$229 million and \$300 million in the first quarter of last year. This implied an expensed SAC per gross addition of \$439 in the quarter versus our estimate of \$353 and \$437 per gross addition last year. We attribute about half of the difference between the reported results and our estimate to an unexpected shift from capitalized subscriber acquisition costs (SAC) to expensed SAC (which we note does not significantly alter actual cash flow) driven by the nature of current promotions, and half to slightly higher subsidies and advertising expense. Including capitalized SAC under the company's Digital Home Plan leasing option, total SAC per gross addition was \$564 in the quarter, up from \$528 in the prior year, and above our estimate of \$503.

**Full Year 2002/2003 Outlook:** We are maintaining our previous subscriber net addition and churn forecasts, in addition to revenue and pre-marketing cash flow margins. However, as a result of EchoStar's plans to continue its current promotional offers that subsidize the consumer purchase of multiple sets in lieu of leasing equipment, we have reduced our 2002 EBITDA forecast from \$976 million to \$800 million, while trimming our 2003 EBITDA projection from \$1.44 billion to \$1.32 billion. However, we note that this primarily reflects a shift from capitalizing SAC to expensing, as well as a shift to higher quality subscriber additions (higher ARPU, lower churn) with a higher mix of multiple sets.

**Valuation/Investment Outlook:** These solid first quarter results highlight, in our view, the continued strong subscriber growth momentum of the DBS industry. Despite the higher-than-projected subscriber acquisition costs expected for the year, approximately half of which reflect shifting capitalized SAC that is recorded below the EBITDA line to expensed SAC above the EBITDA line, we believe the incremental costs are directly tied to an improving subscriber base profile, as the industry continues to acquire above-average quality cable subscribers. These factors are likely to lead to further improvements in ARPU, churn and SAC over time, fueling the industry's improving profitability characteristics, which are highlighted by the emergence of free cash flow and earnings this year. These factors also highlight the stock's attractive valuation of 10.6 times 2003 EBITDA, relative to prospects for 30% five-year EBITDA compound annual growth. As a result, we reiterate our Strong Buy rating and target price of \$50 per share.

## First Quarter 2002 Review

### Subscriber Growth

EchoStar added 335,000 net new subscribers in the first quarter, versus our estimate of 325,000 subscribers and overall Street estimates in the 280,000-350,000 range, to finish the quarter at 7.165 million subscribers, up from 6.83 million at the end of the fourth quarter of last year. With DIRECTV having already reported strong net additions of 342,000 in the first quarter, EchoStar attained essentially 50% incremental market share during the quarter.

***We estimate that EchoStar added 619,000 gross subscribers, down 10% vs. last year***

We estimate that EchoStar added 619,000 gross subscribers, down 10% compared to 688,000 gross additions in the same period last year, despite difficult economic conditions. (Note that last year's first quarter results included a significant, although undisclosed, contribution from the conversion of BellSouth video customers). EchoStar's results were driven by the continued success of selling local signals into the top 36 markets, the equipment leasing model under the Digital Home Plan, the innovative "I Like 9" promotion (which ended on January 31, 2002), and the new "1-2-3 Great TV" promotion which started in February.

***Subscriber churn declined sequentially in the first quarter to 1.35% per month***

Subscriber churn declined sequentially in the first quarter to 1.35% per month, versus 1.62% in the fourth quarter of last year, and was essentially flat compared to 1.38% in the prior year. Churn was significantly better than our 1.55% estimate, as a higher percentage of customers over the last 12 months have signed on under 12-month programming commitments. We would expect the company's churn rate to increase in the second quarter but remain below comparable 2001 levels, primarily the result of seasonality and a \$1 rate increase implemented in March. We estimate that full year churn will be 1.54% per month versus 1.62% per month in 2001, reinforcing the improving quality of the company's subscriber base.

***Management reiterated that it expects to end 2002 with at least 8 million subscribers***

For 2002, management reiterated that it expects to end the year with at least 8 million subscribers, implying a minimum of 1.17 million net additions for the year, based on the assumption of a continued sluggish economy throughout 2002. We are maintaining our year-end 2002 estimate of 8.175 million subscribers, implying net additions of 1.345 million. Likely boosting net additions will be distribution starting in May of EchoStar equipment in RadioShack outlets, which historically have exclusively distributed DIRECTV equipment. With an estimated 20% of DIRECTV sales estimated to come from the RadioShack distribution channel, EchoStar stands to gain significant competitive market share.

### Revenue

Total DISH Network revenue for the first quarter increased 27.9% to \$1,018.9 million, in line with our estimate of \$1,049.7 million. Revenue was driven by the substantially expanded subscriber base mentioned above and a slight increase in average revenue per subscriber (ARPU) to \$48.36 per month, up from \$48.23 per month in the prior year first quarter and down sequentially from \$49.68 in the fourth quarter of last year. ARPU comparisons were



negatively affected by the company's promotional offers, which now offer discounted or free programming versus previous offers that were more equipment-subsidy oriented. For example, the company's "I Like 9" promotion introduced in August 2001 reduced monthly programming prices to the consumer by \$22 per month for the first 12 months of service to \$9 per month for America's Top 100 programming and included free installation, but required the customer to incur at least a \$199 upfront cost for the equipment and make a one-year commitment. This offer was discontinued at the end of January and was replaced by the "1-2-3 Great TV" offer, which includes a free second receiver, three months of free programming (including local channels), and free installation for subscribers choosing to purchase a satellite system for \$149 and committing to 12 months of service.

The negative effects of promotional activity on ARPU was partially offset by a \$1 rate increase applied in February 2001 and March 2002 as well as increased subscriptions to local channels, which are purchased by roughly half the subscriber base, and the continued success of the Digital Home Plan, which adds \$5-\$10 per month in additional equipment lease revenue.

We estimate ARPU will remain relatively flat on a sequential basis in the second quarter at \$48.50 per month, but then increase in the second half of the year as the two promotions mentioned above start to roll-off and we see the full effect of the recent rate increases. By the fourth quarter, we anticipate ARPU to be \$51.67 per month, 4% above \$49.68 reported in the fourth quarter of 2001. For the full year, management guidance is for a modest increase in ARPU over 2001, and we estimate full-year ARPU at \$49.66 per month versus \$49.35 in 2001.

**EchoStar's total  
revenue increased  
28.1% to \$1.105 billion**

EchoStar's total revenue, which includes the DISH Network as well as the company's Equipment and Satellite Services businesses, increased 28.1% to \$1.105 billion, in line with our estimate of \$1.126 billion, as DTH equipment revenue of \$57.1 million and "Other" revenue of \$28.5 million were in line with our estimates of \$50.0 million and \$26.4 million, respectively.

For 2002, management expects total revenue to increase 20%-25%, based on a continued weak economy. We expect total revenue to increase 21.5% to \$4.861 billion in 2002, driven primarily by the aforementioned increase in subscribers and modest increase in ARPU.

### Pre-Marketing Cash Flow

**PMCF increased 28.1%  
to \$450.1 million**

Pre-marketing cash flow (PMCF), measured as operating cash flow (EBITDA) before subscriber acquisition costs, increased 28.1% to \$450.1 million, versus our estimate of \$456.6 million, as the company continued to manage expenses tightly. Overall pre-marketing cash flow margins of 40.8% were flat compared to the prior year first quarter and exceed management's target for year-end of 40%. We note that the company's current free three-month programming offer is substantially depressing PMCF margins by approximately 200-300 basis points, which should be revealed as current promotions roll off later in the year. For 2002, management reiterated that it expects pre-marketing cash flow margin to be about 40%, essentially flat with 2001, as the company expects to make additional investments in customer

service, including an additional customer service call center later this year. We estimate 2002 pre-marketing cash flow to be \$1.985 billion, yielding a 40.8% margin.

### Subscriber Acquisition Costs

*Subscriber acquisition costs expensed on the income statement totaled \$271.6 million*

Subscriber acquisition costs (SAC) expensed on the income statement totaled \$271.6 million versus our estimate of \$229 million and \$300 million in the first quarter of last year, or equivalently \$439 per gross addition in the quarter, versus \$437 per gross addition last year. We attribute about half of the difference between the reported results and our estimate to an unexpected shift from capitalized SAC to expensed SAC driven by the nature of current promotions, and the other half to slightly higher subsidies and advertising expenses. Including capitalized SAC under the company's Digital Home Plan leasing option, total SAC per gross addition was \$564 in the quarter, up from \$528 in the prior year and above our estimate of \$503.

Overall, we estimate that 31% of the company's total gross additions signed up for the Digital Home Plan leasing program, flat compared to the fourth quarter of last year, and below our estimate of 50%, as the introduction of the company's "1-2-3 Great TV" promotion which targets two receiver households proved more popular than we had expected. The leasing program entails capitalization of equipment-related acquisition costs (estimated currently at \$400 per subscriber for EchoStar), thereby reducing operating expenses and raising operating cash flow.

*EchoStar reported that it had recouped \$12 million in cash and returned equipment*

EchoStar also reported that it had recouped \$12 million in cash and returned equipment (representing the depreciated value of the equipment) from customers that churned under the Digital Home Plan. The equipment will be refurbished and either resold or redeployed to new leasing households, effectively lowering the company's overall subscriber acquisition costs over time.

For 2002, the company indicated that it expects expensed acquisition costs per subscriber to be similar to those in the first quarter, and above its previous guidance of being similar to 2001 levels. Therefore, we now expect total SAC to be \$558 in 2002, up from our previous estimate of \$516, of which \$434 is expensed. Based on our full-year estimate of 2.7 million gross additions, we now estimated expensed SAC of \$1.18 billion (up from \$1.01 billion previously) and capitalized SAC of \$340 million in 2002 (down from \$415 million, previously).

### Operating Cash Flow (EBITDA)

After subtracting the expensed subscriber acquisition costs from pre-marketing cash flow, the company reported EBITDA of \$178.5 million, versus our estimate of \$227.5 million, up from \$51.1 million in the first quarter of last year. The difference between the reported results and our estimate reflects the shift from capitalized subscriber acquisition costs to expensed SAC, driven by the nature of current promotions, in addition to slightly higher subsidies and advertising expense mentioned above.

To highlight the cash-flow nature of the shift in capitalized to expensed SAC, we note that reported EBITDA less capitalized SAC during the quarter was \$101.5 million, closer to our estimate of \$130 million on an equivalent basis, with the remaining difference coming from higher subsidies (related to a higher percentage of new customers taking multiple sets) and \$10 million in higher-than-expected advertising expenses in the quarter.

***We have adjusted our 2002 EBITDA estimate down to \$801 million and 2003 EBITDA estimate down to \$1.322 billion***

As a result of these trends, we have adjusted our 2002 EBITDA estimate from \$976 million down to \$801 million and lowered our 2003 EBITDA estimate from \$1.436 billion down to \$1.322 billion. However, we note that this primarily reflects a shift from capitalizing SAC costs to expensing, as well as a shift to higher quality subscriber additions with a higher mix of multiple sets.

### **Net Income**

EchoStar reported operating income of \$95.3 million. However, a \$36 million write-down of the company's remaining stake in StarBand, a \$61.9 million one-time charge related to the Series D Preferred Vivendi stock, and \$19 million in merger related costs resulted in a loss attributable to common shareholders of \$(0.20) per share. Management has previously stated that in the long term it hopes to consistently generate earnings and that it expects positive earnings in 2002. We anticipate positive earnings per share to emerge permanently this year, with estimated EPS of \$0.07 per share for 2002, including the one-time items mentioned above, rising to \$1.00 per share in 2003.

### **Balance Sheet**

At the end of the quarter, the company reported cash and marketable securities of \$4.50 billion, up from \$2.95 billion at the end of 2001 after having closed on the \$1.5 billion Vivendi equity investment during the quarter. Total debt of \$5.7 billion, which includes \$2 billion in convertible securities, was essentially unchanged from year-end 2001.

Capital expenditures during the quarter totaled \$102.9 million, of which \$77 million was related to capitalized equipment under the lease program. For 2002, the company reiterated its capital expenditure guidance of \$500-\$750 million, with approximately 25% of this amount related to satellite construction and the remainder to capitalized equipment and other corporate purposes. Our capital expenditure estimate for 2002 is \$635 million, down from our previous forecast of \$715 million with approximately \$340 million related to capitalized equipment costs.

We estimate that the company reported free cash flow (cash flow from operations less capital expenditures) of \$89 million for the quarter and expect free cash flow for full year 2002 of \$64 million, which we expect to rapidly rise to nearly \$350 million in 2003.

Figure 14 EchoStar—Projected Subscriber Model

	2000A	1001A	2001A	3001A	4001A	2001A	1002A	2002E	3002E	4002E	2002E	2003E	2004E	2005E	2006E	2007E	2008E
<b>DBS Industry Subscribers</b>																	
Beginning of Period	10,092	14,781	15,200	15,710	16,350	17,170	17,725	17,725	18,280	18,920	19,645	19,645	21,698	23,467	25,015	26,366	27,526
End of Period	14,781	15,200	15,710	16,350	17,170	17,725	18,280	18,280	18,920	19,645	19,645	21,698	23,467	25,015	26,366	27,526	28,517
% Change Yr./Yr.	46.5%	35.4%	25.1%	18.9%	16.2%	16.6%	16.4%	16.4%	15.7%	14.4%	14.4%	10.4%	8.2%	5.6%	5.4%	4.4%	3.6%
Industry Net Additions	4,689	419	510	640	820	555	555	555	640	725	2,475	2,043	1,778	1,548	1,351	1,160	991
<b>EchoStar Subscribers</b>																	
Beginning of Period DBS Subscribers	3,410	5,260	5,720	6,070	6,430	6,830	7,165	7,165	7,465	7,800	8,175	8,175	9,298	10,277	11,129	11,872	12,510
Gross Additions	2,555	688	656	684	720	747	619	662	713	734	2,728	2,799	2,834	2,907	2,979	3,037	3,092
- % Change Yr./Yr.	36.2%	17.6%	6.3%	5.4%	2.2%	7.5%	-10.0%	0.8%	4.3%	2.0%	-0.7%	1.2%	2.7%	2.6%	2.5%	2.0%	1.8%
- Marketing Expenses (millions)	(1,020)	(273)	(227)	(224)	(214)	(938)	(234)	(250)	(261)	(269)	(1,014)	(966)	(975)	(983)	(989)	(990)	(988)
- Advertising and Other (millions)	(139)	(27)	(27)	(45)	(47)	(147)	(37)	(40)	(44)	(46)	(169)	(166)	(170)	(174)	(179)	(182)	(185)
- Retention Marketing Adjustment (millions)	4	3	2	2	4	10	6	6	6	6	24	27	30	32	34	36	38
- Reported SAC (from 100)	\$453	\$432	\$384	\$392	\$357	\$395	\$430	\$428	\$420	\$423	\$425	\$400	\$384	\$387	\$380	\$374	\$368
Disconnects	(705)	(228)	(306)	(324)	(320)	(1,177)	(284)	(362)	(378)	(359)	(1,383)	(1,636)	(1,856)	(2,065)	(2,236)	(2,399)	(2,547)
- Monthly Churn	1.36%	1.36%	1.73%	1.73%	1.61%	1.62%	1.35%	1.65%	1.86%	1.50%	1.54%	1.56%	1.58%	1.60%	1.62%	1.64%	1.66%
Net Additions	1,850	460	350	360	400	1,653	335	300	336	375	1,345	1,124	978	832	743	638	545
- % Change Yr./Yr.	25.9%	1.1%	-21.3%	-20.9%	-19.2%	-15.1%	-27.2%	-14.3%	-9.9%	-8.3%	-14.3%	-16.5%	-13.0%	-12.9%	-12.8%	-14.1%	-14.8%
- % Market Share of Net Additions	39.5%	109.8%	60.8%	56.3%	48.6%	85.7%	80.4%	54.1%	52.3%	51.7%	84.3%	55.0%	55.0%	55.0%	56.0%	56.0%	56.0%
Guidance: Max Run 8 mil. 6/2002																	
<b>End of Period EchoStar Subs</b>	5,260	5,720	6,070	6,430	6,830	7,165	7,465	7,465	7,800	8,175	8,175	9,298	10,277	11,129	11,872	12,510	13,055
- % Change Yr./Yr.	54.3%	48.0%	40.8%	34.9%	29.8%	25.3%	23.0%	21.3%	19.7%	19.7%	19.7%	13.7%	10.5%	8.3%	8.7%	5.4%	4.4%
- Average DBS Subscribers	4,314	5,481	5,887	6,219	6,642	7,003	7,315	7,633	7,968	8,285	8,585	9,737	10,768	11,500	12,191	12,782	13,292
- DBS Market Share	35.6%	37.6%	38.6%	39.3%	39.8%	40.4%	40.8%	40.8%	41.2%	41.6%	41.6%	42.9%	43.8%	44.5%	45.0%	45.4%	45.8%

Source: Deutsche Bank Securities Inc. estimates and company information

Figure 16 EchoStar—Projected Operating Model

	2000A	1Q01A	2Q01A	3Q01A	4Q01A	2001A	1Q02A	2Q02A	3Q02A	4Q02A	2002E	2003E	2004E	2005E	2006E	2007E	2008E
<b>DISH Network Revenue</b>																	
Subscription Television Services	\$2,346.7	\$794.4	\$883.1	\$921.0	\$900.0	\$7,550.4	\$1,016.1	\$1,064.3	\$1,141.5	\$1,239.1	\$4,460.0	\$5,114.4	\$5,218.0	\$7,052.7	\$7,901.7	\$8,680.3	\$9,408.2
- Revenue / Avg. Sub / Month	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32	\$45.32
- % Change Yr. / Yr.	6.1%	10.0%	10.0%	8.6%	6.6%	8.6%	0.0%	3.0%	7.0%	4.0%	0.0%	4.0%	2.0%	3.5%	3.5%	3.5%	3.5%
<b>Total DISH Network Revenue</b>	\$2,346.7	\$794.4	\$883.1	\$921.0	\$900.0	\$7,550.4	\$1,016.1	\$1,064.3	\$1,141.5	\$1,239.1	\$4,460.0	\$5,114.4	\$5,218.0	\$7,052.7	\$7,901.7	\$8,680.3	\$9,408.2
- % Change Yr. / Yr.	5.5	2.5	3.2	3.7	7.9	17.3	2.8	2.5	2.5	2.5	10.3	10.6	10.8	11.1	11.4	11.7	12.0
<b>Other DISH Network Revenue</b>	\$2,352.2	\$796.9	\$888.3	\$924.8	\$897.5	\$7,569.7	\$1,018.9	\$1,068.8	\$1,144.8	\$1,240.6	\$4,479.3	\$5,235.6	\$5,340.9	\$7,176.3	\$8,021.1	\$8,801.0	\$9,529.1
- Revenue / Avg. Sub / Month	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44	\$45.44
- % Change Yr. / Yr.	73.0%	73.0%	73.0%	73.0%	73.0%	73.0%	27.8%	20.4%	23.7%	23.3%	24.0%	21.4%	15.9%	13.2%	11.2%	9.7%	8.5%
<b>DISH Equip. Sales &amp; Integration Services</b>	\$2,590.8	\$411.0	\$472.2	\$73.2	\$108.8	\$271.2	\$157.1	\$155.0	\$160.0	\$160.0	\$202.1	\$211.8	\$201.8	\$187.7	\$180.2	\$171.2	\$162.7
- Revenue / Avg. Sub / Month	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61	\$49.61
- % Change Yr. / Yr.	41.2%	34.6%	34.6%	34.6%	34.6%	34.6%	30.1%	36.1%	31.1%	27.2%	27.2%	28.1%	28.1%	28.1%	28.1%	28.1%	28.1%
<b>Other</b>	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4	\$103.4
- % Change Yr. / Yr.	53.8%	34.4%	34.4%	4.0%	81.6%	20.4%	19.0%	10.0%	10.0%	10.0%	17.7%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
<b>Total Revenue</b>	\$2,715.2	\$881.9	\$968.3	\$1,022.3	\$1,135.4	\$4,001.1	\$1,184.5	\$1,257.9	\$1,331.1	\$1,457.8	\$4,861.1	\$5,782.5	\$5,843.7	\$7,488.6	\$8,242.8	\$8,925.3	\$9,768.3
- % Change Yr. / Yr.	69.3%	52.4%	49.5%	48.5%	42.8%	47.4%	28.1%	19.8%	20.4%	18.8%	21.5%	19.2%	16.7%	12.4%	10.7%	9.3%	8.2%
<b>Operating Expenses</b>																	
Subscriber-related Expenses																	
- % Subscription TV Services Revenue	(870.4)	(316.3)	(356.6)	(362.8)	(319.4)	(1,433.2)	(406.2)	(425.7)	(454.3)	(454.3)	(1,779.8)	(2,136.7)	(2,448.4)	(2,735.5)	(3,018.3)	(3,246.7)	(3,537.5)
- % Change Yr. / Yr.	41.4%	39.8%	40.6%	30.4%	39.9%	39.6%	40.2%	40.0%	39.9%	39.7%	39.9%	39.5%	39.0%	38.5%	38.2%	37.9%	37.4%
Customer Service Center and Other	(250.7)	(64.8)	(69.9)	(72.8)	(77.4)	(284.9)	(82.9)	(88.5)	(90.0)	(93.5)	(352.8)	(403.6)	(438.1)	(463.6)	(481.8)	(493.0)	(498.5)
- % Change Yr. / Yr.	54.4%	51.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%
Marketing and Promotional Expenses	(44.4)	(9.1)	(8.8)	(11.3)	(10.4)	(39.6)	(13.2)	(13.3)	(14.3)	(16.1)	(56.8)	(61.2)	(64.2)	(69.5)	(72.7)	(72.7)	(72.7)
- % Change Yr. / Yr.	1.9%	1.1%	1.0%	1.2%	1.1%	1.1%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
<b>Total DISH Network</b>	(1,265.4)	(400.2)	(445.3)	(446.9)	(407.2)	(1,757.8)	(502.3)	(525.6)	(558.6)	(560.1)	(2,148.4)	(2,622.8)	(2,980.7)	(3,298.6)	(3,602.8)	(3,897.4)	(4,158.3)
- % Total DISH Network Revenue	53.8%	50.4%	50.1%	48.3%	45.1%	48.5%	48.5%	48.5%	48.5%	45.1%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%
<b>Cost of Sales-DTH Equip. &amp; Integ. Serv.</b>	(1,950.0)	(528.8)	(531.2)	(849.4)	(876.7)	(1,986.0)	(539.4)	(538.3)	(520.0)	(520.0)	(1,755.0)	(2,136.7)	(2,448.4)	(2,735.5)	(3,018.3)	(3,246.7)	(3,537.5)
- % DTH Equip. Sales Revenue	75.0%	70.3%	69.3%	67.4%	71.6%	69.3%	69.3%	69.3%	69.3%	69.3%	69.3%	69.3%	69.3%	69.3%	69.3%	69.3%	69.3%
<b>Cost of Sales-Other</b>	(330.1)	(159.3)	(224.8)	(135.7)	(27.8)	(27.8)	(18.2)	(22.5)	(17.8)	(16.8)	(67.8)	(64.7)	(69.4)	(104.4)	(108.6)	(115.1)	(120.8)
- % Change Yr. / Yr.	32.0%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%
<b>Gross Profit</b>	(2,605.4)	(773.7)	(697.3)	(353.3)	(158.8)	(1,265.4)	(645.4)	(645.4)	(645.4)	(645.4)	(2,148.4)	(2,622.8)	(2,980.7)	(3,298.6)	(3,602.8)	(3,897.4)	(4,158.3)
- % of Total Revenue	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%
<b>Total Operating Expenses</b>	(1,743.8)	(510.8)	(557.8)	(597.7)	(571.6)	(2,405.4)	(654.4)	(654.4)	(654.4)	(654.4)	(2,148.4)	(2,622.8)	(2,980.7)	(3,298.6)	(3,602.8)	(3,897.4)	(4,158.3)
- % Change Yr. / Yr.	75.0%	88.2%	75.0%	82.2%	82.2%	82.2%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
<b>Pre-Marketing Cash Flow</b>	\$971.4	\$371.3	\$387.5	\$424.8	\$433.0	\$1,895.5	\$499.1	\$499.1	\$499.1	\$499.1	\$1,984.7	\$2,453.3	\$2,814.7	\$3,384.2	\$3,939.0	\$4,266.8	\$4,714.2
- % Change Yr. / Yr.	75.0%	88.2%	75.0%	82.2%	82.2%	82.2%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
- Pre-Marketing Cash Flow Margin	35.8%	40.8%	40.1%	41.5%	37.5%	39.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%
<b>DISH Network Marketing Expenses</b>																	
Subscriber Promotional Expenses - DTH Equip.	(5747.0)	(126.3)	(105.3)	(111.3)	(114.6)	(459.8)	(100.9)	(111.2)	(111.2)	(114.6)	(459.8)	(543.9)	(543.9)	(543.9)	(543.9)	(543.9)	(543.9)
- % Gross Additions	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%
Subscriber Promotional Expenses - Other	(273.1)	(144.9)	(121.4)	(112.9)	(88.7)	(427.9)	(133.4)	(138.0)	(149.7)	(154.2)	(578.3)	(525.0)	(525.0)	(525.0)	(525.0)	(525.0)	(525.0)
- % Gross Additions	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%
Advertising and Other	(138.5)	(28.5)	(28.5)	(45.4)	(47.4)	(148.8)	(37.3)	(37.3)	(37.3)	(42.2)	(189.0)	(185.6)	(170.0)	(174.4)	(178.7)	(182.2)	(185.5)
- % Gross Additions	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%
<b>Total DISH Network Marketing Expenses</b>	(6,158.6)	(300.2)	(255.2)	(269.6)	(269.6)	(1,036.5)	(271.6)	(271.6)	(271.6)	(271.6)	(1,227.0)	(1,214.5)	(1,214.5)	(1,214.5)	(1,214.5)	(1,214.5)	(1,214.5)
- % Expense / Gross Additions	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%
<b>Operating Cash Flow (EBITDA)</b>	(1,897.3)	\$81.1	\$133.8	\$158.2	\$171.1	\$858.1	\$778.5	\$778.5	\$778.5	\$778.5	\$834.3	\$1,311.8	\$1,788.7	\$2,327.1	\$2,871.3	\$3,181.2	\$3,539.1
- % Change Yr. / Yr.	8.9%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%
- EBITDA Margin	4.9%	9.1%	13.8%	15.2%	14.9%	12.8%	16.1%	16.1%	16.1%	16.1%	16.1%	16.1%	16.1%	16.1%	16.1%	16.1%	16.1%
<b>Memo: Total Subscriber Acquisition Costs</b>																	
Expensed Subscriber Acquisition Costs	(1,158.6)	(300.2)	(255.2)	(269.6)	(269.6)	(1,036.5)	(271.6)	(271.6)	(271.6)	(271.6)	(1,227.0)	(1,214.5)	(1,214.5)	(1,214.5)	(1,214.5)	(1,214.5)	(1,214.5)
- % Expense / Gross Additions	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%
Capitalized Subscriber Acquisition Costs	(595.4)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)	(862.7)
- % Expense / Gross Additions	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%
Capitalized SAC / Gross Additions	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0
- % Expense / Gross Additions	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
<b>Total DBS SAC</b>	(1,754.0)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)	(3,862.9)
- % Total SAC / Gross Additions	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%	54.9%

Source: Deutsche Bank Securities Inc. estimates and company information

Figure 16 EchoStar—Projected Income Statement

	2000A	1Q01A	2Q01A	3Q01A	4Q01A	2001A	1Q02A	2Q02E	3Q02E	4Q02E	2002E	2003E	2004E	2005E	2006E	2007E	2008E
<b>Revenue</b>																	
Dish Network	2,352.2	\$796.9	\$886.3	\$924.6	\$997.9	\$3,605.7	\$1,018.9	\$1,065.8	\$1,144.0	\$1,240.6	\$4,470.3	\$5,425.0	\$6,286.9	\$7,116.3	\$7,913.1	\$8,681.0	\$9,420.1
DTH Equip. Sales & Integration Services	259.8	41.0	47.2	73.2	109.8	271.2	57.1	55.0	60.0	60.0	252.1	221.8	201.8	189.7	180.2	171.2	162.7
Other	103.2	24.0	32.8	24.6	42.8	124.2	28.5	36.1	27.1	47.0	138.7	138.7	153.0	160.6	168.6	177.1	185.9
<b>Total Revenue</b>	<b>\$2,715.2</b>	<b>\$861.9</b>	<b>\$966.3</b>	<b>\$1,022.5</b>	<b>\$1,150.4</b>	<b>\$4,001.1</b>	<b>\$1,104.5</b>	<b>\$1,157.9</b>	<b>\$1,231.1</b>	<b>\$1,367.6</b>	<b>\$4,861.1</b>	<b>\$5,782.5</b>	<b>\$6,643.7</b>	<b>\$7,466.6</b>	<b>\$8,262.0</b>	<b>\$8,929.3</b>	<b>\$9,768.7</b>
<b>Operating Expenses</b>																	
Dish Network	(\$1,265.4)	(\$380.2)	(\$437.4)	(\$446.9)	(\$483.3)	(\$1,757.8)	(\$504.3)	(\$525.9)	(\$558.6)	(\$591.1)	(\$2,188.4)	(\$2,623.6)	(\$2,980.7)	(\$3,298.6)	(\$3,602.6)	(\$3,891.4)	(\$4,156.3)
Cost of Sales-DTH Equip. & Integration	(195.0)	(28.6)	(31.2)	(49.4)	(78.7)	(189.0)	(39.4)	(39.5)	(42.0)	(56.0)	(175.9)	(155.3)	(141.3)	(132.6)	(126.2)	(119.9)	(113.9)
Cost of Sales - Other	(33.0)	(15.9)	(22.6)	(15.7)	(27.8)	(82.0)	(16.2)	(23.5)	(17.6)	(30.6)	(87.8)	(94.7)	(99.4)	(104.4)	(109.6)	(115.1)	(120.9)
General and Administrative	(250.4)	(75.7)	(87.7)	(65.6)	(128.9)	(377.9)	(94.5)	(100.7)	(107.7)	(120.3)	(423.3)	(465.7)	(507.6)	(546.7)	(594.4)	(622.4)	(681.6)
<b>Total Operating Expenses</b>	<b>(\$1,743.8)</b>	<b>(\$510.6)</b>	<b>(\$597.8)</b>	<b>(\$597.7)</b>	<b>(\$718.9)</b>	<b>(\$2,405.9)</b>	<b>(\$654.4)</b>	<b>(\$668.2)</b>	<b>(\$725.8)</b>	<b>(\$808.0)</b>	<b>(\$2,878.5)</b>	<b>(\$3,339.3)</b>	<b>(\$3,729.0)</b>	<b>(\$4,082.5)</b>	<b>(\$4,423.0)</b>	<b>(\$4,748.7)</b>	<b>(\$5,054.8)</b>
<b>Pre-Marketing Cash Flow</b>	<b>\$971.4</b>	<b>\$351.3</b>	<b>\$387.5</b>	<b>\$424.8</b>	<b>\$432.0</b>	<b>\$1,495.5</b>	<b>\$459.1</b>	<b>\$468.7</b>	<b>\$505.2</b>	<b>\$559.6</b>	<b>\$1,894.7</b>	<b>\$2,453.3</b>	<b>\$2,914.7</b>	<b>\$3,384.2</b>	<b>\$3,838.0</b>	<b>\$4,288.8</b>	<b>\$4,714.2</b>
- % Change Yr. / Yr.	75.0%	89.2%	75.5%	82.2%	42.5%	64.2%	28.1%	21.2%	18.9%	28.8%	24.4%	23.6%	18.0%	18.1%	13.4%	11.5%	10.1%
- Pre-Marketing Cash Flow Margin	35.8%	40.8%	40.1%	41.5%	37.5%	38.5%	40.8%	40.6%	41.8%	40.9%	40.8%	42.4%	43.9%	45.3%	46.5%	47.4%	48.1%
<b>DISH Network Marketing Expenses</b>	<b>(1,158.6)</b>	<b>(300.2)</b>	<b>(253.7)</b>	<b>(266.6)</b>	<b>(260.9)</b>	<b>(1,084.4)</b>	<b>(271.6)</b>	<b>(290.0)</b>	<b>(305.1)</b>	<b>(318.5)</b>	<b>(1,183.2)</b>	<b>(1,131.4)</b>	<b>(1,145.0)</b>	<b>(1,157.0)</b>	<b>(1,167.7)</b>	<b>(1,172.5)</b>	<b>(1,174.8)</b>
<b>Operating Cash Flow (EBITDA)</b>	<b>(\$187.2)</b>	<b>\$51.1</b>	<b>\$133.8</b>	<b>\$155.2</b>	<b>\$171.1</b>	<b>\$411.1</b>	<b>\$178.5</b>	<b>\$179.7</b>	<b>\$200.1</b>	<b>\$243.1</b>	<b>\$801.4</b>	<b>\$1,321.9</b>	<b>\$1,788.7</b>	<b>\$2,227.1</b>	<b>\$2,671.3</b>	<b>\$3,108.2</b>	<b>\$3,539.4</b>
- % Change Yr. / Yr.	8.9%	-158.1%	-52.1%	-68.0%	-58.4%	-73.0%	248.1%	34.4%	29.0%	42.1%	58.8%	65.0%	33.9%	25.9%	19.9%	16.4%	13.9%
- EBITDA Margin	-6.9%	5.9%	13.8%	15.2%	14.8%	10.2%	16.2%	15.3%	16.3%	17.6%	16.5%	22.8%	26.8%	29.8%	32.3%	34.4%	36.2%
<b>Non-Cash, Stock-Based Compensation</b>	<b>(851.5)</b>	<b>(\$7.5)</b>	<b>(\$7.0)</b>	<b>(\$6.8)</b>	<b>\$1.1</b>	<b>(\$20.2)</b>	<b>(\$1.7)</b>	<b>(\$1.7)</b>	<b>(\$1.7)</b>	<b>(\$1.7)</b>	<b>(\$6.8)</b>	<b>(\$15.6)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>
Depreciation and Amortization	(185.4)	(58.8)	(62.8)	(72.9)	(84.1)	(278.7)	(81.5)	(86.2)	(97.5)	(103.3)	(368.5)	(485.9)	(567.9)	(627.7)	(652.0)	(668.8)	(689.7)
<b>Operating Income</b>	<b>(\$424.1)</b>	<b>(\$15.2)</b>	<b>\$63.9</b>	<b>\$75.3</b>	<b>\$88.1</b>	<b>\$212.3</b>	<b>\$95.3</b>	<b>\$91.9</b>	<b>\$101.0</b>	<b>\$138.1</b>	<b>\$426.2</b>	<b>\$820.5</b>	<b>\$1,201.7</b>	<b>\$1,598.4</b>	<b>\$2,019.3</b>	<b>\$2,439.4</b>	<b>\$2,868.8</b>
Interest Income	\$79.7	\$24.6	\$22.2	\$27.7	\$23.3	\$97.7	\$29.8	\$56.2	\$56.1	\$56.0	\$198.2	\$229.2	\$246.9	\$274.5	\$304.7	\$331.5	\$375.3
Interest Expense	(269.0)	(83.1)	(86.1)	(95.4)	(106.8)	(371.4)	(126.2)	(117.0)	(112.0)	(121.9)	(480.2)	(464.0)	(441.2)	(441.2)	(441.6)	(431.6)	(426.3)
Loss on Investments	0.0	(91.8)	0.0	0.0	(27.0)	(116.8)	(24.0)	0.0	0.0	0.0	(24.0)	0.0	0.0	0.0	0.0	0.0	0.0
Other	(8.3)	(4.3)	(5.6)	(4.5)	(19.2)	(33.6)	(10.2)	(5.0)	(5.0)	(5.0)	(25.2)	(35.0)	(35.0)	(35.0)	(35.0)	(35.0)	(35.0)
<b>Income / (Loss) Before Taxes</b>	<b>(\$626.7)</b>	<b>(\$109.8)</b>	<b>(\$5.6)</b>	<b>\$3.2</b>	<b>(\$41.6)</b>	<b>(\$213.9)</b>	<b>(\$38.4)</b>	<b>\$26.1</b>	<b>\$40.0</b>	<b>\$67.2</b>	<b>\$95.9</b>	<b>\$590.7</b>	<b>\$972.4</b>	<b>\$1,397.7</b>	<b>\$1,847.3</b>	<b>\$2,418.3</b>	<b>\$2,963.7</b>
Income Taxes	(0.6)	(0.0)	(0.0)	(0.1)	(1.2)	(1.5)	(0.2)	0.0	0.0	0.0	(0.2)	0.0	0.0	(316.3)	(646.6)	(846.7)	(1,044.3)
- Effective Tax Rate	-0.1%	0.0%	-0.8%	3.6%	-3.0%	-0.7%	-0.6%	0.0%	0.0%	0.0%	-0.2%	0.0%	0.0%	22.6%	35.0%	35.0%	35.0%
- Net Operating Loss Carryforwards	(2,050.0)	(2,219.8)	(2,225.4)	(2,227.2)	(2,112.0)	(2,112.0)	(2,150.4)	(2,124.3)	(2,084.3)	(2,017.0)	(2,017.0)	(1,468.3)	(483.9)	0.0	0.0	0.0	0.0
<b>Net Income / (Loss)</b>	<b>(\$627.2)</b>	<b>(\$109.8)</b>	<b>(\$5.6)</b>	<b>\$3.1</b>	<b>(\$42.8)</b>	<b>(\$215.3)</b>	<b>(\$38.6)</b>	<b>\$26.1</b>	<b>\$40.0</b>	<b>\$67.2</b>	<b>\$94.7</b>	<b>\$590.7</b>	<b>\$972.4</b>	<b>\$1,081.4</b>	<b>\$1,200.8</b>	<b>\$1,572.5</b>	<b>\$1,919.4</b>
Extraordinary Items	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Series D Preferred Stock Accrual	0.0	0.0	0.0	0.0	0.0	0.0	(61.9)	0.0	0.0	0.0	(61.9)	0.0	0.0	0.0	0.0	0.0	0.0
Change in Value of CVR	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
Preferred Stock Dividends	(1.1)	(0.2)	(0.2)	(0.0)	0.0	(0.4)	(97.0)	0.0	0.0	0.0	(97.0)	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net Income / (Loss) to Common</b>	<b>(\$628.4)</b>	<b>(\$178.0)</b>	<b>(\$5.8)</b>	<b>\$3.1</b>	<b>(\$42.9)</b>	<b>(\$216.7)</b>	<b>(\$97.6)</b>	<b>\$26.1</b>	<b>\$40.0</b>	<b>\$67.2</b>	<b>\$36.3</b>	<b>\$590.7</b>	<b>\$972.4</b>	<b>\$1,081.4</b>	<b>\$1,200.8</b>	<b>\$1,572.5</b>	<b>\$1,919.4</b>
Average Diluted Common Shares	471.0	474.6	475.6	486.6	479.4	477.2	479.7	487.7	488.2	488.7	488.0	549.3	552.3	555.3	558.3	563.3	608.4
<b>Earnings Per Share</b>	<b>(\$1.32)</b>	<b>(\$0.38)</b>	<b>(\$0.01)</b>	<b>\$0.01</b>	<b>(\$0.09)</b>	<b>(\$0.45)</b>	<b>(\$0.20)</b>	<b>\$0.05</b>	<b>\$0.08</b>	<b>\$0.14</b>	<b>\$0.67</b>	<b>\$1.00</b>	<b>\$1.78</b>	<b>\$1.95</b>	<b>\$2.15</b>	<b>\$2.70</b>	<b>\$3.18</b>

Source: Deutsche Bank Securities Inc. estimates and company information



Figure 17 EchoStar—Projected Sources and Uses Statement

	2000A	1001A	2001A	3001A	4Q01A	2001A	1Q02A	2002E	3Q02E	4Q02E	2002E	2003E	2004E	2005E	2006E	2007E	2008E
<b>Sources and Uses</b>																	
Net Income (Loss) Before Extraordinary Items	(\$621.2)	(\$169.9)	(\$5.6)	\$3.1	(\$42.9)	(\$215.3)	(\$38.6)	\$26.1	\$40.0	\$67.2	\$94.7	\$550.7	\$972.4	\$1,081.4	\$1,200.8	\$1,572.5	\$1,939.4
Non-Cash, Stock-Based Compensation	51.5	7.5	7.0	6.8	(1.1)	20.2	1.7	1.7	1.7	1.7	6.8	15.6	0.0	0.0	0.0	0.0	0.0
Depreciation and Amortization	185.4	58.9	62.8	72.9	84.1	278.7	81.5	86.2	97.5	103.3	368.5	485.9	567.9	627.7	652.0	668.8	669.7
Amort of Debt Discount and Del Fin Costs	6.5	1.9	1.9	2.8	2.6	9.2	2.6	2.6	2.6	2.6	10.4	7.5	7.5	7.5	0.0	0.0	0.0
Change in Working Capital	244.3	(13.9)	85.1	82.3	35.7	169.1	93.2	30.0	20.0	10.0	153.2	0.0	0.0	0.0	0.0	0.0	0.0
Other, Net	6.9	95.3	43.4	10.3	76.6	227.6	51.4	5.0	5.0	5.0	66.4	35.0	35.0	35.0	35.0	35.0	35.0
<b>Cash Flow From Operations</b>	<b>(\$118.7)</b>	<b>(\$20.3)</b>	<b>\$174.8</b>	<b>\$178.3</b>	<b>\$156.9</b>	<b>\$485.5</b>	<b>\$191.8</b>	<b>\$151.5</b>	<b>\$166.8</b>	<b>\$188.8</b>	<b>\$780.0</b>	<b>\$1,084.7</b>	<b>\$1,582.9</b>	<b>\$1,751.8</b>	<b>\$1,887.8</b>	<b>\$2,276.3</b>	<b>\$2,844.1</b>
Satellite Capital Expenditures	(150.9)	(58.9)	(40.3)	(55.2)	(37.0)	(191.5)	(5.9)	(60.0)	(60.0)	(80.0)	(185.9)	(250.0)	(250.0)	(250.0)	0.0	0.0	0.0
Capitalized Subscriber Acquisition Costs	(85.4)	(62.7)	(86.4)	(108.9)	(80.0)	(338.0)	(77.0)	(79.5)	(83.6)	(90.0)	(340.0)	(386.3)	(386.4)	(383.7)	(381.3)	(378.6)	(371.0)
Other Capital Expenditures	(115.1)	(27.0)	(27.0)	(27.0)	(27.0)	(108.0)	(20.0)	(30.0)	(30.0)	(30.0)	(110.0)	(110.0)	(113.0)	(116.0)	(119.0)	(122.0)	(125.0)
<b>Total Capital Expenditures</b>	<b>(\$331.4)</b>	<b>(\$148.6)</b>	<b>(\$153.7)</b>	<b>(\$191.1)</b>	<b>(\$144.0)</b>	<b>(637.5)</b>	<b>(\$102.9)</b>	<b>(\$108.5)</b>	<b>(\$183.6)</b>	<b>(\$180.0)</b>	<b>(\$635.9)</b>	<b>(\$746.3)</b>	<b>(\$746.4)</b>	<b>(\$749.7)</b>	<b>(\$500.3)</b>	<b>(\$488.6)</b>	<b>(\$496.0)</b>
<b>Free Cash Flow</b>	<b>(\$450.1)</b>	<b>(\$168.9)</b>	<b>\$20.9</b>	<b>(\$12.8)</b>	<b>\$12.9</b>	<b>(\$148.0)</b>	<b>\$88.9</b>	<b>(\$17.9)</b>	<b>(\$16.8)</b>	<b>\$9.9</b>	<b>\$64.1</b>	<b>\$348.4</b>	<b>\$834.4</b>	<b>\$1,001.9</b>	<b>\$1,387.5</b>	<b>\$1,777.7</b>	<b>\$2,148.1</b>
- % Change Yr. / Yr.													138.5%	20.1%	38.5%	28.1%	20.8%
<b>Other Sources and Uses</b>																	
Debt Proceeds	\$990.4	\$0.0	\$980.0	\$0.0	\$685.0	\$1,565.0	\$1,483.5	\$0.0	\$0.0	\$0.0	\$1,483.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Issuance of Notes Receivable	(8.7)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Proceeds from Options & ESOP	11.6	1.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Debt Redemption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(14.8)	(14.7)	(2.0)	(0.7)	(0.7)	(375.7)	(1,000.7)	(0.8)
Investments	(80.0)	0.0	0.0	(50.0)	0.0	(50.0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	(190.8)	(11.3)	20.3	(28.0)	(47.4)	(58.4)	(21.5)	0.0	0.0	0.0	(21.5)	0.0	0.0	0.0	0.0	0.0	0.0
<b>Balance Available</b>	<b>\$292.4</b>	<b>(\$178.7)</b>	<b>\$1,021.2</b>	<b>(\$96.9)</b>	<b>\$490.5</b>	<b>\$1,402.1</b>	<b>\$1,599.9</b>	<b>(\$17.9)</b>	<b>(\$16.8)</b>	<b>(\$4.9)</b>	<b>\$1,511.4</b>	<b>\$348.4</b>	<b>\$833.7</b>	<b>\$1,001.1</b>	<b>\$1,811.8</b>	<b>\$777.8</b>	<b>\$2,147.3</b>

Source: Deutsche Bank Securities Inc. estimates and company information



# Exhibit 18 EchoStar—Projected Balance Sheet

	2000A	1001A	2001A	3001A	4001A	1002A	2002E	3002E	4002E	2003E	2004E	2005E	2006E	2007E	2008E
<b>Long-Term Debt</b>															
12 7/8% Sen. Sec. Dis. Notes due 2004	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
13 1/8% Sen. Sec. Dis. Notes due 2004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 1/2% Sen. Sec. Notes due 2002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 1/8% Senior Notes due 2009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 1/4% Senior Notes due 2006	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)	(375.0)
9 3/8% Senior Notes due 2009	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)	(1,825.0)
10 3/8% Senior Notes due 2007	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)
Mortgage and Other Notes Payable	(35.9)	(32.0)	(29.2)	(25.2)	(21.3)	(21.3)	(21.3)	(21.3)	(21.3)	(21.3)	(21.3)	(21.3)	(21.3)	(21.3)	(21.3)
<b>Total Long-Term Debt</b>	<b>(\$3,035.9)</b>	<b>(\$3,032.0)</b>	<b>(\$3,029.2)</b>	<b>(\$3,025.2)</b>	<b>(\$3,021.3)</b>	<b>(\$3,021.3)</b>	<b>(\$3,021.3)</b>	<b>(\$3,021.3)</b>	<b>(\$3,021.3)</b>	<b>(\$3,021.3)</b>	<b>(\$3,021.3)</b>	<b>(\$3,021.3)</b>	<b>(\$3,021.3)</b>	<b>(\$3,021.3)</b>	<b>(\$3,021.3)</b>
- Interest Expense	(8229.7)	(873.4)	(873.3)	(873.3)	(873.3)	(889.1)	(889.1)	(889.1)	(889.1)	(889.1)	(889.1)	(889.1)	(889.1)	(889.1)	(889.1)
<b>Cash and Cash Equivalents</b>															
Beginning of Period Cash & Cash Equivalents	\$908.3	\$842.2	\$877.3	\$1,568.0	\$1,333.1	\$942.2	\$2,459.3	\$2,481.4	\$2,484.6	\$1,801.2	\$2,459.7	\$3,639.8	\$4,840.9	\$5,652.7	\$6,429.7
End of Period Cash & Cash Equivalents	942.2	877.3	1,568.0	1,333.1	1,801.2	2,459.3	2,481.4	2,484.6	2,459.7	2,459.7	2,459.7	3,639.8	4,840.9	5,652.7	6,429.7
- Average Cash	925.0	899.8	1,223.1	1,451.0	1,587.2	1,801.2	2,400.3	2,470.0	2,462.2	2,400.3	2,400.3	3,231.0	4,140.4	5,148.8	6,141.2
- Interest Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
- Interest Income	25.7	6.8	9.2	10.8	11.8	38.6	16.7	16.5	16.5	68.1	79.0	90.7	124.2	154.4	225.1
<b>Marketable Investment Securities</b>															
Beginning of Period Marketable Securities	\$148.9	\$607.4	\$403.5	\$823.3	\$968.1	\$607.4	\$2,003.3	\$2,003.3	\$2,003.3	\$1,150.4	\$2,003.3	\$2,003.3	\$2,003.3	\$2,003.3	\$2,003.3
End of Period Marketable Securities	607.4	493.5	823.3	968.1	1,504.4	1,504.4	2,003.3	2,003.3	2,003.3	2,003.3	2,003.3	2,003.3	2,003.3	2,003.3	2,003.3
- Average Marketable Investments	608.0	540.5	858.4	865.7	1,095.2	706.9	2,003.3	2,003.3	2,003.3	1,888.7	2,003.3	2,003.3	2,003.3	2,003.3	2,003.3
- Interest Rate	13.2%	12.9%	7.9%	7.5%	4.3%	7.5%	7.5%	7.5%	7.5%	8.8%	7.5%	7.5%	7.5%	7.5%	7.5%
- Interest Income	54.0	17.7	13.0	16.8	11.5	59.0	37.6	37.6	37.6	129.1	150.2	150.2	150.2	150.2	150.2
<b>Beginning of Period Debt, Net</b>	<b>(\$2,955.5)</b>	<b>(\$1,485.4)</b>	<b>(\$1,651.1)</b>	<b>(\$823.1)</b>	<b>(\$725.0)</b>	<b>(\$1,416.4)</b>	<b>(\$783.3)</b>	<b>(\$783.3)</b>	<b>(\$783.3)</b>	<b>(\$783.3)</b>	<b>(\$783.3)</b>	<b>(\$783.3)</b>	<b>(\$783.3)</b>	<b>(\$783.3)</b>	<b>(\$783.3)</b>
End of Period Debt, Net	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)	(1,485.4)
- Average Debt, Net	(1,554.0)	(1,532.7)	(1,148.1)	(881.1)	(747.3)	(1,031.8)	5.8	772.4	755.9	751.6	751.6	1,322.1	2,440.3	3,895.0	5,110.8
<b>Convertible Notes (Treated as Equity)</b>															
4.875% Convertible Sub. Notes due 2007	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)
- Interest Expense	(48.8)	(12.2)	(17.0)	(12.2)	(12.2)	(48.8)	(12.2)	(12.2)	(12.2)	(48.8)	(12.2)	(12.2)	(12.2)	(12.2)	(12.2)
5.75% Convertible Sub. Notes due 2008	0.0	0.0	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)
- Interest Expense	0.0	0.0	(4.8)	(14.4)	(14.4)	(33.5)	(14.4)	(14.4)	(14.4)	(37.5)	(37.5)	(37.5)	(37.5)	(37.5)	(37.5)
<b>Total Convertible Notes</b>	<b>(1,000.0)</b>	<b>(1,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>	<b>(2,000.0)</b>
- Interest Expense	(48.8)	(12.2)	(17.0)	(26.6)	(26.6)	(82.3)	(26.6)	(26.6)	(26.6)	(106.3)	(106.3)	(106.3)	(106.3)	(106.3)	(106.3)
<b>Preferred Stock (Treated as Equity)</b>															
6 3/4% Series C Cumulative Conv. Pref. Stock	(10.9)	(9.0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Accrued Preferred Stock Dividends	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Cash Preferred Stock Dividends	(1.1)	(0.2)	(0.1)	0.0	0.0	(0.3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8% Series A Cumulative Preferred Stock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Accrued Preferred Stock Dividends	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Series D Convertible Preferred (Vivendi)	0.0	0.0	0.0	0.0	0.0	0.0	(1,500.0)	(1,500.0)	(1,500.0)	(1,500.0)	(1,500.0)	(1,500.0)	(1,500.0)	(1,500.0)	(1,500.0)
- Accrued Preferred Stock Dividends	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Preferred Stock</b>	<b>(10.9)</b>	<b>(9.0)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>(1,500.0)</b>	<b>(1,500.0)</b>	<b>(1,500.0)</b>	<b>(1,500.0)</b>	<b>(1,500.0)</b>	<b>(1,500.0)</b>	<b>(1,500.0)</b>	<b>(1,500.0)</b>	<b>(1,500.0)</b>
- Accrued Preferred Stock Dividends	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Cash Preferred Stock Dividends	(1.1)	(0.2)	(0.1)	0.0	0.0	(0.3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Unrealized Expenses Summary:</b>															
Long-Term Debt	(\$228.7)	(\$73.4)	(\$73.3)	(\$73.3)	(\$73.3)	(\$293.3)	(\$89.1)	(\$89.1)	(\$89.1)	(\$356.3)	(\$355.1)	(\$355.0)	(\$354.8)	(\$337.5)	(\$216.3)
Convertible Notes	(48.8)	(12.2)	(17.0)	(26.6)	(26.6)	(82.3)	(26.6)	(26.6)	(26.6)	(106.3)	(106.3)	(106.3)	(106.3)	(106.3)	(106.3)
Bridge Commitment Fees	0.0	0.0	0.0	0.0	(7.4)	(7.4)	(15.0)	0.0	(10.0)	(25.0)	(22.6)	0.0	0.0	0.0	0.0
Bridge Ticking Fees	0.0	0.0	0.0	0.0	(4.9)	(4.9)	(4.0)	(4.2)	(4.2)	(16.5)	0.0	0.0	0.0	0.0	0.0
Capitalized Interest	5.0	4.7	4.5	7.2	7.5	28.0	5.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0
Other Interest Expense	5.9	(2.2)	(2.3)	(2.8)	(2.3)	(9.5)	0.4	(2.2)	(2.2)	(6.2)	(10.9)	(10.9)	(10.9)	(10.9)	(10.9)
<b>Book Interest Expense</b>	<b>(\$268.0)</b>	<b>(\$63.1)</b>	<b>(\$66.1)</b>	<b>(\$95.4)</b>	<b>(\$108.8)</b>	<b>(\$371.4)</b>	<b>(\$129.2)</b>	<b>(\$117.0)</b>	<b>(\$121.0)</b>	<b>(\$400.2)</b>	<b>(\$484.0)</b>	<b>(\$441.2)</b>	<b>(\$441.6)</b>	<b>(\$318.6)</b>	<b>(\$228.3)</b>

Source: Deutsche Bank Securities Inc. estimates and company information

Figure 19 EchoStar—Discounted Cash Flow Valuation

Dollars and Shares in Millions

	2002E	2003E	2004E	2005E	2006E	2007E	2008E
<b>Free Cash Flow</b>	\$64.1	\$348.4	\$834.4	\$1,001.9	\$1,387.5	\$1,777.7	\$2,148.1
Plus: Interest Expense, Net	282.0	234.7	194.3	166.7	136.9	(14.9)	(149.0)
Less: Income Tax Credit (35.0%)	(98.7)	(82.2)	(68.0)	(58.4)	(47.9)	5.2	52.2
<b>Unlevered Free Cash Flow</b>	<b>\$247.4</b>	<b>\$501.0</b>	<b>\$960.7</b>	<b>\$1,110.2</b>	<b>\$1,476.5</b>	<b>\$1,768.0</b>	<b>\$2,051.3</b>
2002 PV of FCF discounted at 10.0%		\$455.4	\$794.0	\$834.1	\$1,008.5	\$1,097.8	\$1,157.9
2003 PV of FCF discounted at 10.0%			873.4	917.6	1,109.3	1,207.6	1,273.7
2004 PV of FCF discounted at 10.0%				1,009.3	1,220.3	1,328.3	1,401.0
Terminal Value @ 11.0x EBITDA							<b>\$38,933.0</b>
• Subscriber Multiple							\$2,982
• Free Cash Flow Multiple							22.0x
Sum of Free Cash Flow at PV	\$5,347.7	\$5,381.5	\$4,958.9				
Plus: Terminal Value (10.0% discount rate)	21,976.7	24,174.3	26,591.8				
<b>Total Enterprise Value</b>	<b>\$27,324.4</b>	<b>\$29,555.8</b>	<b>\$31,550.7</b>				
• EV / DBS Subscriber	\$3,342	\$3,178	\$3,070				
• EV / EBITDA	34.1x	22.4x	17.8x				
Less: End of Year Debt	(\$3,706.5)	(\$3,704.5)	(\$3,703.8)				
Less: 4.875% Convertible Sub. Notes	0.0	0.0	0.0				
Less: 5.75% Convertible Sub. Notes	0.0	0.0	0.0				
Plus: End of Year Cash	2,459.7	2,806.1	3,639.8				
Plus: End of Year Marketable Securities	2,003.3	2,003.3	2,003.3				
Plus: Non-Marketable Investment Securities	44.9	48.1	51.5				
Plus: Option Proceeds	355.9	355.9	355.9				
<b>Net Asset Value</b>	<b>\$28,481.7</b>	<b>\$31,064.8</b>	<b>\$33,897.4</b>				
Class A Common Stock	241.3	241.3	241.3				
Class B Common Stock	238.4	238.4	238.4				
4.875% Convertible Sub. Notes	22.0	22.0	22.0				
5.75% Convertible Sub. Notes	23.1	23.1	23.1				
Series D Convertible Preferred (Vivendi)	57.6	57.6	57.6				
Stock Options	24.8	24.8	24.8				
Fully Diluted Shares Outstanding	607.3	607.3	607.3				
<b>Private Market Value Per Share</b>	<b>\$46.90</b>	<b>\$51.16</b>	<b>\$55.82</b>				
Discount to Private Market Value	10.0%	10.0%	10.0%				
<b>Public Market Value per Share</b>	<b>\$42.21</b>	<b>\$46.04</b>	<b>\$50.24</b>				
Current Price on: 5/7/02	\$25.50	\$25.50	\$25.50				
Upside to Target Price Per Share	65.5%	80.6%	97.0%				

Source: Deutsche Bank Securities Inc. estimates and company information

**Figure 20 EchoStar—Valuation Multiple Analysis**

Deutsche Bank Securities Inc. 2002

	2002E	2003E	2004E
Current Price on: 5/7/02	\$25.50	\$25.50	\$25.50
Fully Diluted Shares (1)	601.8	601.8	601.8
Total Market Capitalization	\$15,345.0	\$15,345.0	\$15,345.0
Plus: End of Year Debt	\$3,706.5	\$3,704.5	\$3,703.8
Less: End of Year Cash	(2,459.7)	(2,806.1)	(3,639.8)
Less: End of Year Marketable Securities	(2,003.3)	(2,003.3)	(2,003.3)
Less: Non-Mkt Investment Securities (@90% PMV)	(40.4)	(43.3)	(46.3)
Less: Option Proceeds (1)	(137.5)	(137.5)	(137.5)
<b>Total EchoStar Enterprise Value</b>	<b>\$14,410.5</b>	<b>\$14,059.3</b>	<b>\$13,221.8</b>
EchoStar Year-End DBS Subscribers	8,175	9,299	10,277
<b>Enterprise Value Per Subscriber</b>	<b>\$1,763</b>	<b>\$1,512</b>	<b>\$1,287</b>
Operating Cash Flow (EBITDA)	\$801.4	\$1,321.9	\$1,769.7
• Operating Cash Flow Margin	16.5%	22.8%	26.8%
<b>EBITDA Multiple</b>	<b>18.0X</b>	<b>10.6X</b>	<b>7.5X</b>
Free Cash Flow	\$64.1	\$348.4	\$834.4
<b>FCF Multiple</b>	<b>—</b>	<b>44.0X</b>	<b>18.4X</b>
Earnings per Share	\$0.07	\$1.00	\$1.76
<b>P/E Multiple</b>	<b>—</b>	<b>25.4X</b>	<b>14.5X</b>

(1) Fully Diluted Shares and Option Proceeds include only in-the-money options

Source: Deutsche Bank Securities Inc. estimates and company information